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*S^r Philip Touchet Chetwode
of Oakley Staffordshire Bar^t.*



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THE

CALCULATOR:

BEING,

CORRECT AND NECESSARY

TABLES

FOR

COMPUTATION.

ADAPTED TO

Science, Business, and Pleasure.

By JAMES DODSON, *Accomptant,*

And Teacher of the Mathematics.

L O N D O N :

Printed for JOHN WILCOX, at *Virgil's Head*,
opposite the *New Church* in the *Strand*.

M. DCC. XLVII.

WILLIAM JONES ESQ.
CALCULATOR
Fellow of the Royal Society

BEING

HONOURABLE

GOVERNMENT AND NECESSARY

deriving having merited

ABLE

the original plan thereof

having by your Advice

been considerably



COMPUTATION

many useful matters from your

almost inexhaustible and invaluable

PAPERS: Therefore, to a grateful

Sense of these and many other favours

which I beg your indulgence for

my declaring in this public manner

how much I am

BY JAMES DODSON, Accountant

Honoured Sir

Your most obliged

And most humble servant

Printed for John Wilson, at Wright's Hall

opposite the West Church in the Strand

M.DCC.LXXXV. Dodson.

WILLIAM JONES, *Esq;*

Fellow of the Royal Society.

HONOURED SIR,



THE Design of this Undertaking having merited your Approbation; and the original Plan thereof having by your friendly Advice, been considerably altered; and you having generously contributed to it many useful Materials, from your almost inexhaustible and invaluable Papers: Therefore, thro' a grateful Sense of these and many other Favours, I beg your Indulgence for my declaring in this public manner, how much I am,

Honoured Sir,

Your most obliged,

And most humble Servant,

James Dodson.

WILLIAM JOHNSON
Printer
PHILADELPHIA

THE DESIGN of this
work is to have a Collection of the most useful
Tables having bearing on
the original Plan of the
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the Tables have been altered
as those whose Affairs
conveniently be without
all common Elements from your
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Also the Table of
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by means of another
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may be found in this
Quadrant and Sine
others, answers the
proportional Parts in
Other Tables, that are
in larger Volume and
calculated a new, as the
and Answers, not less
The Table of
Values of foreign
the Comparisons of
as also the Table of
times, with their
prime and composite
common: The Table of



P R E F A C E.



O have a Collection of the generally useful, and most necessary Tables, in one portable Volume, has been long desired by Persons of Business, almost in every Station of Life; and in order to accommodate them in some measure, I have here put together, in the most concise and best manner I could, the Tables that are esteemed absolutely necessary, such as those whose Affairs require Computations, cannot conveniently be without, and such as are sufficient for all common Purposes.

To the Table of the Logarithms of given Numbers, contracted as much as it well can be, I have added a Table of Numbers to given Logarithms.

Altho' the Table of the Logarithms of Sines and Tangents is calculated only to every single Minute, yet by means of another small Table, the Log. Sines or Log. Tangents of Seconds, or of Thirds, if needful, may be found even in the two first Degrees of the Quadrant; also a Table of Products, that, among others, answers the Purposes of the common Table of proportional Parts, is annexed.

Other Tables, that are scarce, or to be found only in larger Volumes, are inserted, and, where practicable calculated a-new; as the Tables of Compound Interest and Annuities, not less useful than those of Mr *Smart's*: The Tables of Annuities for Lives, upon Mr *De Moivre's* Principles: Sir *Isaac Newton's* Tables of the Values of foreign Coins: Dr *Arbuthnot's* Tables of the Comparisons of Foreign Weights and Measures: as also the Tables of the *English* Weights and Measures; with their decimal Values: The Tables of prime and composited Numbers, which are not very common: The Table of Square Roots, from *Briggs*:
The

P R E F A C E.

The Table of Specific Gravities, collected from divers Authors: The Table of the Arcs of a Circle, their versed Sines and Segments; from *Guldinus*: The Tables of Refractions: Traverse Table: Table of Logistical Logarithms:

To these I have likewise added some Tables that were not publick before; as Tables for the ready making of *Neper's* Logarithms: Tables of Combinations, Permutations, &c. The Table of Cube Roots: A Table of the Products of Auxiliary Numbers: Tables for the ready computing the Sides, Areas, and Solidities of regular Polygons, and Solids: with some others.

I have given a short Account of the Manner of making Use of most of these Tables; to have gone farther would have been contrary to the original Design of this Book. And as what I have undertaken was wholly intended for the Ease and Benefit of the Curious, I hope that my Endeavours herein will be receiv'd by them with Candour.

Since the Table of Specific Gravities was printed off, the following Experiments relating to Diamonds were communicated by Mr *John Ellicott*, F. R. S.

No.	Water,	In Air.	In Water	Speci. Gra.
		Grains.	Gr.	1000
1	A <i>Brazil</i> Diamond, fine Water, rough Coat,	92,425	66,16	3518
2	Ditto, fine Water, rough Coat, ———	88,21	63,16	3521
3	Ditto, fine bright Coat, ———	10,025	7,170	3511
4	Ditto, fine bright Coat, ———	9,560	6,830	3501
5	An <i>East India</i> Diamond, pale blue, ———	26,485	18,945	3512
6	Ditto, bright yellow, ———	23,33	16,71	3524
7	Ditto, very fine Water, bright Coat, ———	20,66	14,8	3525
8	Ditto, very bad Water, honeycomb Coat, ———	20,38	14,59	3519
9	Ditto, very hard blewish Cast, ———	22,5	16,1	3515
10	Ditto, very soft good Water, ———	22,615	16,2	3525
11	Ditto, a large red Foul in it, ———	25,48	18,23	3514
12	Ditto, soft bad Water, ———	29,525	21,140	3521
13	Ditto, soft brown Coat, ———	26,535	18,99	3516
14	Ditto, very deep green Coat, ———	25,25	18,08	3521

Hence, The mean Specific Gravity of the *Brazil* Diamonds

appears to be, 3513

The Mean of the *East India* Diamonds 3519

The Mean of both to be 3516

THE

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Note, $(G + 1)$ signifies 1 added to G ; $(A - 1)$ 1 taken from A ;
 (500×8) 500 multiplied by 8; $(a \times C)$ a multiplied by C ;
 $\left(\frac{900}{18}\right)$ 900 divided by 18; (r^3) the third Power of r ;
 (\sqrt{a}) the Root of a ; and $(m = aC)$ m is equal to aC .

THE
CALCULATOR.

TABLE I.

	At 2 p. C.	2½ per C.	3 per C.	3½ per C.	4 per C.
Years.	1	,02	,025	,03	,035
	2	,04	,05	,06	,07
	3	,06	,075	,09	,105
	4	,08	,1	,12	,14
	5	,1	,125	,15	,175
	6	,12	,15	,18	,21
	7	,14	,175	,21	,245
	8	,16	,2	,24	,28
	9	,18	,225	,27	,315
	10	,2	,25	,3	,35
	11	,22	,275	,33	,385
	12	,24	,3	,36	,42
	13	,26	,325	,39	,455
	14	,28	,35	,42	,49
	15	,3	,375	,45	,525
	16	,32	,4	,48	,56
	17	,34	,425	,51	,595
	18	,36	,45	,54	,63
	19	,38	,475	,57	,665
	20	,4	,5	,6	,7
Yrs. — Months.	21	,42	,525	,63	,735
	22	,44	,55	,66	,77
	23	,46	,575	,69	,805
	24	,48	,6	,72	,84
	25	,5	,625	,75	,875
	1	,005	,00625	,0075	,00875
	2	,01	,0125	,015	,0175
	3	,015	,01875	,0225	,02625
	1	,001667	,002083	,0025	,002917
	2	,003333	,004167	,005	,005833
	3	,005	,00625	,0075	,00875
	4	,006667	,008333	,01	,011667
	5	,008333	,010417	,0125	,014583
	6	,010000	,012500	,015	,017500
	7	,011667	,014583	,0175	,020417
	8	,013333	,016667	,02	,023333
	9	,015000	,018750	,0225	,026250
	10	,016667	,020833	,025	,029167
	11	,018333	,022917	,0275	,032083
	1	,000055	,000068	,000082	,000096
	2	,000110	,000137	,000164	,000192
	3	,000164	,000205	,000247	,000288
	4	,000219	,000274	,000329	,000384
	5	,000274	,000342	,000411	,000479
	6	,000329	,000411	,000493	,000575
	7	,000384	,000479	,000575	,000671
	8	,000438	,000548	,000658	,000767
	9	,000493	,000616	,000740	,000863
	10	,000548	,000685	,000822	,000959
Days.	20	,001096	,001370	,001644	,001918
	30	,001644	,002055	,002466	,002877
	40	,002192	,002740	,003288	,003836
	50	,002740	,003425	,004110	,004795
	60	,003288	,004110	,004932	,005753
	70	,003836	,004795	,005753	,006712
	80	,004384	,005479	,006575	,007671
	90	,004932	,006164	,007397	,008630
	100	,005479	,006849	,008219	,009589
	200	,010959	,013699	,016438	,019178
	300	,016438	,020548	,024658	,028767
		At 2 p. C.	2½ per C.	3 per C.	3½ per C.
					4 per C.

The Simple Interest of 1 l.

3

		4½ per C.	5 per C.	6 per C.	7 per C.	8 per C.
Years.	1	,045	,05	,06	,07	,08
	2	,09	,1	,12	,14	,16
	3	,135	,15	,18	,21	,24
	4	,18	,2	,24	,28	,32
	5	,225	,25	,3	,35	,4
	6	,27	,3	,36	,42	,48
	7	,315	,35	,42	,49	,56
	8	,36	,4	,48	,56	,64
	9	,405	,45	,54	,63	,72
	10	,45	,5	,6	,7	,8
	11	,495	,55	,66	,77	,88
	12	,54	,6	,72	,84	,96
	13	,585	,65	,78	,91	1,04
	14	,63	,7	,84	,98	1,12
	15	,675	,75	,90	1,05	1,2
	16	,72	,8	,96	1,12	1,28
	17	,765	,85	1,02	1,19	1,36
	18	,81	,9	1,08	1,26	1,44
	19	,855	,95	1,14	1,33	1,52
	20	,9	1,	1,2	1,4	1,6
Qrs.	21	,945	1,05	1,26	1,47	1,68
	22	,99	1,1	1,32	1,54	1,76
	23	1,035	1,15	1,38	1,61	1,84
	24	1,08	1,2	1,44	1,68	1,92
	25	1,125	1,25	1,5	1,75	2,
Months.	1	,01125	,0125	,015	,0175	,02
	2	,0225	,025	,03	,035	,04
	3	,03375	,0375	,045	,0525	,06
	4	,00375	,004167	,005	,005833	,006667
	5	,0075	,008333	,01	,011667	,013333
	6	,01125	,012500	,015	,017500	,020000
	7	,015	,016667	,02	,023333	,026667
	8	,01875	,020833	,025	,029167	,033333
	9	,0225	,025000	,03	,035000	,040000
	10	,02625	,029167	,035	,040833	,046667
	11	,03	,033333	,04	,046667	,053333
	12	,03375	,037500	,045	,052500	,060000
	13	,0375	,041667	,05	,058333	,066667
	14	,04125	,045833	,055	,064167	,073333
Days.	1	,000123	,000137	,000164	,000192	,000219
	2	,000247	,000274	,000329	,000384	,000438
	3	,000370	,000411	,000493	,000575	,000658
	4	,000493	,000548	,000658	,000767	,000877
	5	,000616	,000685	,000822	,000959	,001096
	6	,000740	,000822	,000986	,001151	,001315
	7	,000863	,000959	,001151	,001342	,001534
	8	,000986	,001096	,001315	,001534	,001753
	9	,001110	,001233	,001479	,001726	,001973
	10	,001233	,001370	,001644	,001918	,002192
	20	,002466	,002740	,003288	,003836	,004384
	30	,003699	,004110	,004932	,005753	,006575
	40	,004932	,005479	,006575	,007671	,008767
	50	,006164	,006849	,008219	,009589	,010959
	60	,007397	,008219	,009863	,011507	,013151
	70	,008630	,009589	,011507	,013425	,015342
	80	,009863	,010959	,013151	,015342	,017534
	90	,011096	,012329	,014795	,017260	,019726
	100	,012329	,013699	,016438	,019178	,021918
	200	,024658	,027397	,032877	,038356	,043836
	300	,036986	,041096	,049315	,057534	,065753
		4½ per C.	5 per C.	6 per C.	7 per C.	8 per C.

TABLE II.

Ys.	At 2 p.C.	$2\frac{1}{2}$ per C.	3 per C.	$3\frac{1}{2}$ per C.	4 per C.
1	1,020000	1,025000	1,030000	1,035000	1,040000
2	1,040400	1,050625	1,060900	1,071225	1,081600
3	1,061208	1,076891	1,092727	1,108718	1,124864
4	1,082432	1,103813	1,125509	1,147523	1,169859
5	1,104081	1,131408	1,159274	1,187686	1,216653
6	1,126162	1,159693	1,194052	1,229255	1,265319
7	1,148686	1,188686	1,229874	1,272279	1,315932
8	1,171659	1,218403	1,266770	1,316809	1,368569
9	1,195093	1,248863	1,304773	1,362897	1,423312
10	1,218994	1,280085	1,343916	1,410599	1,480244
11	1,243374	1,312087	1,384234	1,459970	1,539454
12	1,268242	1,344889	1,425761	1,511069	1,601032
13	1,293607	1,378511	1,468534	1,563956	1,665074
14	1,319479	1,412974	1,512590	1,618695	1,731676
15	1,345868	1,448298	1,557967	1,675349	1,800944
16	1,372786	1,484506	1,604706	1,733986	1,872981
17	1,400241	1,521618	1,652848	1,794676	1,947901
18	1,428246	1,559659	1,702433	1,857489	2,025817
19	1,456811	1,598650	1,753506	1,922501	2,106849
20	1,485947	1,638616	1,806111	1,989789	2,191123
21	1,515666	1,679582	1,860295	2,059431	2,278768
22	1,545980	1,721571	1,916103	2,131512	2,369919
23	1,576899	1,764611	1,973587	2,206114	2,464716
24	1,608437	1,808726	2,032794	2,283328	2,563304
25	1,640606	1,853944	2,093778	2,363245	2,665836
26	1,673418	1,900293	2,156591	2,445959	2,772470
27	1,706886	1,947800	2,221289	2,531567	2,883369
28	1,741024	1,996495	2,287928	2,620172	2,998703
29	1,775845	2,046407	2,356566	2,711878	3,118651
30	1,811362	2,097568	2,427262	2,806794	3,243398
31	1,847589	2,150007	2,500080	2,905031	3,373133
32	1,884541	2,203757	2,575083	3,006708	3,508059
33	1,922231	2,258851	2,652335	3,111942	3,648381
34	1,960676	2,315322	2,731905	3,220860	3,794316
35	1,999890	2,373205	2,813862	3,333590	3,946089
36	2,039887	2,432535	2,898278	3,450266	4,103933
37	2,080685	2,493349	2,985227	3,571025	4,268090
38	2,122299	2,555682	3,074783	3,696011	4,438813
39	2,164745	2,619574	3,167027	3,825372	4,616366
40	2,208040	2,685064	3,262037	3,959260	4,801021
41	2,252200	2,752190	3,359899	4,097834	4,993061
42	2,297244	2,820995	3,460696	4,241258	5,192784
43	2,343189	2,891520	3,564517	4,389702	5,400495
44	2,390053	2,963808	3,671452	4,543342	5,616515
45	2,437854	3,037903	3,781596	4,702359	5,841176
46	2,486611	3,113851	3,895044	4,866941	6,074823
47	2,536344	3,191697	4,011895	5,037284	6,317816
48	2,587070	3,271490	4,132252	5,213589	6,570528
49	2,638812	3,353277	4,256219	5,396065	6,833349
50	2,691588	3,437109	4,383906	5,584927	7,106683
51	2,745420	3,523036	4,515423	5,780399	7,390951
52	2,800328	3,611112	4,650886	5,982713	7,686589
53	2,856335	3,701390	4,790412	6,192108	7,994052
54	2,913461	3,793925	4,934125	6,408832	8,313814
55	2,971731	3,888773	5,082149	6,633141	8,646367
56	3,031165	3,985992	5,234613	6,865301	8,992222
57	3,091789	4,085642	5,391651	7,105587	9,351910
58	3,153624	4,187783	5,553401	7,354282	9,725987
59	3,216697	4,292478	5,720003	7,611682	10,115026
60	3,281031	4,399790	5,891603	7,878091	10,519627
Ys.	At 2 p. C.	$2\frac{1}{2}$ per C.	3 per C.	$3\frac{1}{2}$ per C.	4 per C.

The Amount of 1 l. at Compound Interest.

5

Ys.	4½ per C.	5 per C.	6 per C.	7 per C.	8 per C.
1	1,045000	1,050000	1,060000	1,070000	1,080000
2	1,092025	1,102500	1,123600	1,144900	1,166400
3	1,141166	1,157625	1,191016	1,225043	1,259712
4	1,192519	1,215506	1,262477	1,310796	1,360489
5	1,246182	1,276282	1,338226	1,402552	1,469328
6	1,302260	1,340096	1,418519	1,500730	1,586874
7	1,360862	1,407100	1,503630	1,605781	1,713824
8	1,422101	1,477455	1,593848	1,718186	1,850930
9	1,486095	1,551328	1,689479	1,838459	1,999005
10	1,552969	1,628895	1,790848	1,967151	2,158925
11	1,622853	1,710339	1,898299	2,104852	2,331639
12	1,695881	1,795856	2,012196	2,252192	2,518170
13	1,772196	1,885649	2,132928	2,409845	2,719624
14	1,851945	1,979932	2,260904	2,578534	2,937194
15	1,935282	2,078928	2,396558	2,759032	3,172169
16	2,022370	2,182875	2,540352	2,952164	3,425943
17	2,113377	2,292018	2,692773	3,158815	3,700018
18	2,208479	2,406619	2,854339	3,379932	3,996020
19	2,307860	2,526950	3,025600	3,616528	4,315701
20	2,411714	2,653298	3,207135	3,869684	4,660957
21	2,520241	2,785963	3,399564	4,140562	5,033834
22	2,633652	2,925261	3,603537	4,430402	5,436540
23	2,752166	3,071524	3,819750	4,740530	5,871464
24	2,876014	3,225101	4,048935	5,072367	6,341181
25	3,005434	3,386355	4,291871	5,427433	6,848475
26	3,140679	3,555673	4,549383	5,807353	7,396353
27	3,282010	3,733456	4,822346	6,213868	7,988061
28	3,429700	3,920129	5,111687	6,648838	8,627106
29	3,584036	4,116136	5,418388	7,114257	9,317275
30	3,745318	4,321942	5,743491	7,612255	10,062657
31	3,913857	4,538039	6,088101	8,145113	10,867669
32	4,089981	4,764941	6,453387	8,715271	11,737033
33	4,274030	5,003189	6,840590	9,325340	12,676050
34	4,466362	5,253348	7,251025	9,978114	13,690134
35	4,667348	5,516015	7,686087	10,676581	14,785344
36	4,877378	5,791816	8,147252	11,423942	15,968172
37	5,096860	6,081407	8,636087	12,223618	17,245626
38	5,326219	6,385477	9,154252	13,079271	18,625276
39	5,565899	6,704751	9,703507	13,994820	20,115298
40	5,816365	7,039989	10,285718	14,974458	21,724522
41	6,078101	7,391988	10,902861	16,022670	23,462483
42	6,351615	7,761588	11,557033	17,144257	25,339482
43	6,637438	8,149667	12,250455	18,344355	27,366640
44	6,936123	8,557150	12,985482	19,628460	29,555972
45	7,248248	8,985008	13,764611	21,002452	31,920449
46	7,574420	9,434258	14,590487	22,472623	34,474085
47	7,915268	9,905971	15,465917	24,045707	37,232012
48	8,271456	10,401270	16,393872	25,728907	40,210573
49	8,643671	10,921333	17,377504	27,529930	43,427419
50	9,032636	11,467401	18,420154	29,457025	46,901613
51	9,439105	12,040770	19,525364	31,519017	50,653742
52	9,863865	12,642808	20,696885	33,725348	54,706041
53	10,307739	13,274949	21,938698	36,086122	59,082524
54	10,771587	13,938696	23,255020	38,612151	63,809126
55	11,256308	14,635631	24,650322	41,315001	68,913856
56	11,762842	15,367412	26,129341	44,207052	74,426965
57	12,292170	16,135783	27,697101	47,301545	80,381122
58	12,845318	16,942572	29,358927	50,612653	86,811612
59	13,423357	17,789701	31,120463	54,155539	93,756540
60	14,027408	18,679186	32,987691	57,946427	101,257064
Ys.	4½ per C.	5 per C.	6 per C.	7 per C.	8 per C.

<i>Ys</i>	2 per C.	2½ per C.	3 per C.	3½ per C.	4 per C.
1	,980392	,975610	,970874	,966184	,961538
2	,961170	,951814	,942596	,933511	,924556
3	,942322	,928599	,915142	,901943	,888996
4	,923845	,905951	,888487	,871442	,854804
5	,905732	,883854	,862609	,841973	,821927
6	,887971	,862297	,837484	,813501	,790315
7	,870560	,841265	,813092	,785991	,759918
8	,853490	,820747	,789409	,759412	,730690
9	,836755	,800728	,766417	,733731	,702587
10	,820348	,781198	,744094	,708919	,675564
11	,804263	,762145	,722421	,684946	,649581
12	,788493	,743556	,701380	,661783	,624597
13	,773033	,725420	,680951	,639404	,600574
14	,757875	,707727	,661118	,617782	,577475
15	,743015	,690466	,641862	,596891	,555265
16	,728446	,673625	,623167	,576706	,533908
17	,714163	,657195	,605016	,557204	,513373
18	,700159	,641166	,587395	,538361	,493628
19	,686431	,625528	,570286	,520156	,474642
20	,672971	,610271	,553676	,502566	,456387
21	,659776	,595386	,537549	,485571	,438834
22	,646839	,580865	,521893	,469151	,421955
23	,634156	,566697	,506692	,453286	,405726
24	,621721	,552875	,491934	,437957	,390121
25	,609531	,539391	,477606	,423147	,375117
26	,597579	,526235	,463695	,408838	,360689
27	,585862	,513401	,450189	,395012	,346817
28	,574375	,500878	,437077	,381654	,333477
29	,563112	,488661	,424346	,368748	,320651
30	,552071	,476743	,411987	,356278	,308319
31	,541246	,465115	,399987	,344230	,296460
32	,530633	,453771	,388337	,332590	,285058
33	,520229	,442703	,377026	,321343	,274094
34	,510028	,431905	,366045	,310476	,263552
35	,500028	,421371	,355383	,299977	,253415
36	,490223	,411094	,345032	,289833	,243669
37	,480611	,401067	,334983	,280032	,234297
38	,471187	,391285	,325226	,270562	,225285
39	,461948	,381741	,315754	,261413	,216621
40	,452890	,372431	,306557	,252572	,208289
41	,444010	,363347	,297628	,244031	,200278
42	,435304	,354485	,288959	,235779	,192575
43	,426769	,345839	,280543	,227806	,185168
44	,418401	,337404	,272372	,220102	,178046
45	,410197	,329175	,264439	,212659	,171198
46	,402154	,321146	,256737	,205468	,164614
47	,394268	,313313	,249259	,198520	,158283
48	,386538	,305671	,241999	,191806	,152195
49	,378958	,298216	,234950	,185320	,146341
50	,371528	,290942	,228107	,179053	,140713
51	,364243	,283846	,221463	,172998	,135301
52	,357101	,276923	,215013	,167148	,130097
53	,350099	,270169	,208750	,161496	,125093
54	,343234	,263579	,202670	,156035	,120282
55	,336504	,257151	,196767	,150758	,115656
56	,329906	,250879	,191036	,145660	,111208
57	,323437	,244760	,185472	,140734	,106930
58	,317095	,238790	,180070	,135975	,102817
59	,310878	,232966	,174825	,131377	,988863
60	,304782	,227284	,169733	,126934	,95060
<i>Ys</i>	2 per C.	2½ per C.	3 per C.	3½ per C.	4 per C.

The present Value of 1 l. at *Comp. Interest.* 7

N.	4½ per C.	5 per C.	6 per C.	7 per C.	8 per C.
1	,956938	,952381	,943396	,934579	,925926
2	,915730	,907029	,889996	,873439	,857339
3	,876297	,863838	,839619	,816298	,793832
4	,838561	,822702	,792094	,762895	,735030
5	,802451	,783526	,747258	,712986	,680583
6	,767896	,746215	,704961	,666342	,630170
7	,734828	,710681	,665057	,622750	,583490
8	,703185	,676839	,627412	,582009	,540269
9	,672904	,644609	,591898	,543934	,500249
10	,643928	,613913	,558395	,508349	,463193
11	,616199	,584679	,526788	,475093	,428883
12	,589664	,556837	,496969	,444012	,397114
13	,564272	,530321	,468839	,414965	,367698
14	,539973	,505068	,442301	,387817	,340461
15	,516720	,481017	,417265	,362446	,315242
16	,494469	,458112	,393646	,338735	,291890
17	,473176	,436297	,371364	,316574	,270269
18	,452800	,415521	,350344	,295864	,250249
19	,433302	,395734	,330513	,276508	,231712
20	,414643	,376889	,311805	,258419	,214548
21	,396787	,358942	,294155	,241513	,198656
22	,379701	,341850	,277505	,225713	,183941
23	,363350	,325571	,261797	,210947	,170315
24	,347703	,310068	,246979	,197147	,157699
25	,332731	,295303	,232999	,184249	,146018
26	,318402	,281241	,219810	,172195	,135202
27	,304691	,267848	,207368	,160930	,125187
28	,291571	,255094	,195630	,150402	,115914
29	,279015	,242946	,184557	,140563	,107328
30	,267000	,231377	,174110	,131367	,099377
31	,255502	,220359	,164255	,122773	,092016
32	,244501	,209866	,154957	,114741	,085200
33	,233971	,199873	,146186	,107235	,078889
34	,223896	,190355	,137912	,100219	,073045
35	,214254	,181290	,130105	,093663	,067635
36	,205028	,172657	,122741	,087535	,062625
37	,196199	,164436	,115793	,081809	,057986
38	,187750	,156605	,109239	,076457	,053690
39	,179665	,149148	,103056	,071455	,049713
40	,171929	,142046	,097222	,066780	,046031
41	,164525	,135282	,091719	,062412	,042621
42	,157440	,128840	,086527	,058329	,039464
43	,150661	,122704	,081630	,054513	,036541
44	,144173	,116861	,077009	,050946	,033834
45	,137964	,111297	,072650	,047613	,031328
46	,132023	,105997	,068533	,044498	,029007
47	,126338	,100949	,064658	,041587	,026859
48	,120898	,096142	,060998	,038867	,024869
49	,115692	,091564	,057546	,036324	,023027
50	,110710	,087204	,054288	,033947	,021321
51	,105942	,083051	,051215	,031727	,019742
52	,101380	,079096	,048310	,029651	,018280
53	,097014	,075330	,045582	,027711	,016925
54	,092837	,071743	,043001	,025899	,015672
55	,088839	,068326	,040567	,024204	,014511
56	,085013	,065073	,038271	,022621	,013436
57	,081353	,061974	,036105	,021141	,012441
58	,077849	,059023	,034061	,019758	,011519
59	,074497	,056212	,032133	,018465	,010666
60	,071289	,053535	,030314	,017257	,009886
N.	4½ per C.	5 per C.	6 per C.	7 per C.	8 per C.

Ys.	2 per C.	2½ per C.	3 per C.	3½ per C.	4 per C.
1	1,000000	1,000000	1,000000	1,000000	1,000000
2	2,020000	2,025000	2,030000	2,035000	2,040000
3	3,060400	3,075625	3,090900	3,106225	3,121600
4	4,121608	4,152516	4,183627	4,214943	4,246464
5	5,204040	5,256329	5,309136	5,362466	5,416323
6	6,308121	6,387737	6,468410	6,550152	6,632975
7	7,434283	7,547430	7,662462	7,779408	7,898294
8	8,582969	8,736116	8,892336	9,051687	9,214226
9	9,754628	9,954519	10,159106	10,368496	10,582795
10	10,949721	11,203382	11,463879	11,731393	12,006107
11	12,168715	12,483466	12,807796	13,141992	13,486351
12	13,412090	13,795553	14,192030	14,601962	15,025805
13	14,680332	15,140442	15,617790	16,113030	16,626838
14	15,973938	16,518953	17,086324	17,676986	18,291911
15	17,293417	17,931927	18,598914	19,295681	20,023588
16	18,639285	19,380225	20,156881	20,971030	21,824531
17	20,012071	20,864730	21,761588	22,705016	23,697512
18	21,412312	22,386349	23,414435	24,499691	25,645413
19	22,840559	23,946007	25,116868	26,357181	27,671229
20	24,297370	25,544658	26,870374	28,279682	29,778079
21	25,783317	27,183274	28,676486	30,269471	31,969202
22	27,298984	28,862856	30,536780	32,328902	34,247970
23	28,844963	30,584427	32,452884	34,460414	36,617889
24	30,421862	32,349038	34,426470	36,666528	39,082604
25	32,030301	34,157764	36,459264	38,949857	41,645908
26	33,670906	36,011708	38,553042	41,313102	44,311745
27	35,344324	37,912001	40,709634	43,759060	47,084214
28	37,051210	39,859801	42,930923	46,290627	49,967583
29	38,792235	41,856296	45,218850	48,910799	52,966286
30	40,568079	43,902703	47,575416	51,622677	56,084938
31	42,379441	46,000271	50,002678	54,429471	59,328335
32	44,227030	48,150278	52,502759	57,334502	62,701469
33	46,111570	50,354034	55,077841	60,341210	66,209527
34	48,033802	52,612885	57,730177	63,453152	69,857909
35	49,994478	54,928207	60,462082	66,674013	73,652225
36	51,994367	57,301413	63,275944	70,007603	77,598314
37	54,034255	59,733948	66,174223	73,457869	81,702246
38	56,114940	62,227297	69,159449	77,028895	85,970336
39	58,237238	64,782979	72,234233	80,724906	90,409150
40	60,401983	67,402554	75,401260	84,550278	95,025516
41	62,610023	70,087617	78,663298	88,509537	99,826536
42	64,862223	72,839808	82,023196	92,607371	104,819598
43	67,159468	75,660803	85,483892	96,848629	110,012382
44	69,502657	78,552323	89,048409	101,238331	115,412877
45	71,892710	81,516131	92,719861	105,781673	121,029392
46	74,330564	84,554034	96,501457	110,484031	126,870568
47	76,817176	87,667885	100,396501	115,350973	132,945390
48	79,353519	90,859582	104,408396	120,388257	139,263206
49	81,940590	94,131072	108,540648	125,601846	145,833734
50	84,579401	97,484349	112,796867	130,997910	152,667084
51	87,270989	100,921458	117,180773	136,582837	159,773767
52	90,016409	104,444494	121,696197	142,363236	167,164718
53	92,816737	108,055606	126,347082	148,345950	174,851306
54	95,673072	111,756996	131,137495	154,538058	182,845359
55	98,586534	115,550921	136,071620	160,946890	191,159173
56	101,558264	119,439694	141,153768	167,580031	199,805540
57	104,589430	123,425687	146,388381	174,445332	208,797762
58	107,681218	127,511329	151,780033	181,550919	218,149672
59	110,834843	131,699112	157,333434	188,905201	227,875659
60	114,051539	135,991590	163,053437	196,516883	237,990685
Ys.	2 per C.	2½ per C.	3 per C.	3½ per C.	4 per C.

The Amount of an Annuity of 1 l.

<i>Ys.</i>	<i>4½ per C.</i>	<i>5 per C.</i>	<i>6 per C.</i>	<i>7 per C.</i>	<i>8 per C.</i>
1	1,000000	1,000000	1,000000	1,000000	1,000000
2	2,045000	2,050000	2,060000	2,070000	2,080000
3	3,137025	3,152500	3,183600	3,214900	3,246400
4	4,278191	4,310125	4,374616	4,439943	4,506112
5	5,470710	5,525631	5,637093	5,750739	5,866601
6	6,716892	6,801913	6,975319	7,153291	7,335920
7	8,019152	8,142008	8,393838	8,654021	8,922801
8	9,380014	9,549109	9,897468	10,259803	10,636628
9	10,802114	11,026564	11,491316	11,977989	12,487558
10	12,288209	12,577893	13,180795	13,816448	14,486562
11	13,841179	14,206787	14,971643	15,783599	16,645487
12	15,464032	15,917127	16,869941	17,888451	18,977120
13	17,159913	17,712983	18,882138	20,140643	21,495297
14	18,932109	19,598632	21,015066	22,550488	24,214920
15	20,784054	21,578564	23,275970	25,129022	27,152114
16	22,719337	23,657492	25,672528	27,888054	30,324283
17	24,741707	25,840366	28,212880	30,840217	33,750226
18	26,855084	28,132385	30,905653	33,999033	37,450244
19	29,063562	30,539004	33,759992	37,378965	41,446263
20	31,37423	33,065954	36,78559	40,995492	45,761964
21	33,783137	35,719252	39,992726	44,865177	50,422921
22	36,303378	38,505214	43,392290	49,005739	55,456755
23	38,937030	41,430475	46,995828	53,436141	60,893296
24	41,689196	44,501999	50,815577	58,176671	66,764759
25	44,565210	47,727099	54,86452	63,249038	73,105940
26	47,570645	51,113454	59,156383	68,676470	79,954415
27	50,711324	54,669126	63,705766	74,483823	87,350768
28	53,993333	58,402583	68,528112	80,697691	95,338830
29	57,423033	62,322712	73,639798	87,346529	103,965936
30	61,007070	66,438848	79,058186	94,460786	113,283211
31	64,752388	70,760790	84,801677	102,073041	123,345868
32	68,666245	75,298829	90,889778	110,218154	134,213537
33	72,756226	80,063771	97,343165	118,933425	145,950620
34	77,030256	85,066959	104,183755	128,258765	158,626670
35	81,496618	90,320307	111,434780	138,236878	172,316804
36	86,163966	95,836323	119,120867	148,913460	187,102148
37	91,041344	101,628139	127,268119	160,337402	203,070320
38	96,138205	107,709546	135,904206	172,561020	220,315945
39	101,464424	114,095023	145,058458	185,640292	238,941221
40	107,030323	120,799774	154,761966	199,635112	259,056519
41	112,846688	127,839763	165,047684	214,609570	280,781040
42	118,924789	135,231751	175,950545	230,632240	304,243523
43	125,276404	142,993339	187,507577	247,776496	329,583005
44	131,913842	151,143006	199,758032	266,120851	356,949646
45	138,849965	159,700156	212,743514	285,749311	386,505617
46	146,098214	168,68564	226,508125	306,751763	418,426067
47	153,672633	178,119422	241,098612	329,224386	452,900152
48	161,587902	188,025393	256,564529	353,270093	490,132164
49	169,859357	198,426663	272,958401	378,999001	530,342737
50	178,503028	209,347996	290,335905	405,528929	573,770156
51	187,535665	220,815395	308,756059	435,985955	620,671769
52	196,974769	232,856165	328,281422	467,504971	671,325510
53	206,838634	245,498974	348,978308	501,230319	726,031551
54	217,146373	258,773922	370,917006	537,316442	785,114075
55	227,917959	272,712618	394,172027	575,928593	848,923201
56	239,174268	287,348249	418,822348	617,243594	917,837058
57	250,937110	302,715662	444,951689	661,450646	992,264022
58	263,229280	318,851445	472,648790	708,752191	1072,645144
59	276,074597	335,794017	502,007718	759,364844	1159,456755
60	289,497954	353,583718	533,128181	813,520383	1253,213296
<i>Ys.</i>	<i>4½ per C.</i>	<i>5 per C.</i>	<i>6 per C.</i>	<i>7 per C.</i>	<i>8 per C.</i>

<i>Y.</i>	<i>2 per C.</i>	<i>2½ per C.</i>	<i>3 per C.</i>	<i>3½ per C.</i>	<i>4 per C.</i>
1	0,980392	,975610	,970874	,966184	,961538
2	1,941561	1,927424	1,913470	1,899694	1,886095
3	2,883883	2,856024	2,828611	2,801637	2,775091
4	3,807729	3,761974	3,717098	3,673079	3,629895
5	4,713460	4,645828	4,579707	4,515052	4,451822
6	5,601431	5,508125	5,417191	5,328553	5,242137
7	6,471991	6,349391	6,230283	6,114544	6,002055
8	7,325481	7,170137	7,019692	6,873956	6,732745
9	8,162237	7,970866	7,786109	7,607687	7,435332
10	8,982585	8,752064	8,530203	8,316605	8,110896
11	9,786848	9,514209	9,252624	9,001551	8,760477
12	10,575341	10,257765	9,954004	9,663334	9,385074
13	11,348374	10,983185	10,634955	10,302738	9,985648
14	12,106249	11,690912	11,296073	10,920520	10,563123
15	12,849264	12,381378	11,937935	11,517411	11,118387
16	13,577709	13,055003	12,561102	12,094117	11,652296
17	14,291872	13,712198	13,166118	12,651321	12,165669
18	14,992031	14,353364	13,753513	13,189682	12,659297
19	15,678462	14,978891	14,323799	13,709837	13,133939
20	16,351433	15,589162	14,877475	14,212403	13,590326
21	17,011209	16,184549	15,415024	14,697974	14,029160
22	17,658048	16,765413	15,936917	15,167125	14,451115
23	18,292204	17,332110	16,443608	15,620410	14,856842
24	18,913926	17,884986	16,935542	16,058368	15,246963
25	19,523456	18,424376	17,413148	16,481515	15,622080
26	20,121036	18,950611	17,876842	16,890352	15,982769
27	20,706898	19,464011	18,327031	17,285365	16,329586
28	21,281272	19,964889	18,764108	17,667019	16,663063
29	21,844385	20,453550	19,188455	18,035767	16,983715
30	22,396456	20,930293	19,600441	18,392045	17,292033
31	22,937702	21,395407	20,000428	18,736276	17,588494
32	23,468335	21,849178	20,388766	19,068865	17,873552
33	23,988564	22,291881	20,765792	19,390208	18,147646
34	24,498592	22,723686	21,131837	19,700684	18,411198
35	24,998619	23,145157	21,487220	20,000661	18,664613
36	25,488842	23,556251	21,832252	20,290494	18,908282
37	25,969453	23,957318	22,167235	20,570525	19,142579
38	26,440641	24,348603	22,492462	20,841087	19,367864
39	26,902589	24,730344	22,808215	21,102501	19,584485
40	27,355479	25,102775	23,114772	21,355072	19,792774
41	27,799489	25,466122	23,412401	21,599104	19,993052
42	28,234794	25,820607	23,701359	21,834883	20,185627
43	28,661562	26,166446	23,981902	22,062689	20,370795
44	29,079963	26,503849	24,254274	22,282791	20,548841
45	29,490160	26,833024	24,518713	22,495450	20,720040
46	29,892314	27,154170	24,775449	22,700918	20,884654
47	30,286582	27,467483	25,024708	22,899438	21,042936
48	30,673120	27,773154	25,266707	23,091244	21,195131
49	31,052078	28,071369	25,501657	23,276564	21,341472
50	31,423606	28,362312	25,729764	23,455618	21,482185
51	31,787849	28,646158	25,951227	23,628616	21,617485
52	32,144950	28,923081	26,166240	23,795765	21,747582
53	32,495049	29,193249	26,374990	23,957260	21,872675
54	32,838283	29,456829	26,577660	24,113295	21,992957
55	33,174788	29,713979	26,774428	24,264053	22,108612
56	33,504694	29,964858	26,965464	24,409713	22,219819
57	33,828131	30,209617	27,150936	24,550448	22,326749
58	34,145227	30,448407	27,331005	24,686423	22,429567
59	34,456104	30,681373	27,505831	24,817801	22,528430
60	34,760887	30,908656	27,675564	24,944734	22,623490
<i>Ys.</i>	<i>2 per C.</i>	<i>2½ per C.</i>	<i>3 per C.</i>	<i>3½ per C.</i>	<i>4 per C.</i>

The present Value of an Annuity of 1 l. 11

N.	4½ per C.	5 per C.	6 per C.	7 per C.	8 per C.
1	,956938	,952381	,943396	,934579	,925926
2	1,872668	1,859410	1,833393	1,808018	1,783265
3	2,748964	2,723248	2,673012	2,624316	2,577097
4	3,587526	3,545951	3,465106	3,387211	3,312127
5	4,389977	4,329477	4,212364	4,100197	3,992710
6	5,157872	5,075692	4,917324	4,766540	4,622880
7	5,892701	5,786373	5,582381	5,389289	5,206370
8	6,595886	6,463213	6,209794	5,971299	5,746639
9	7,268790	7,107822	6,801692	6,515232	6,246888
10	7,912718	7,721735	7,360087	7,023582	6,710081
11	8,528917	8,306414	7,886875	7,498674	7,138964
12	9,118581	8,863252	8,383844	7,942686	7,536078
13	9,682852	9,393573	8,852683	8,357651	7,903776
14	10,222825	9,898641	9,294984	8,745468	8,244237
15	10,739546	10,379658	9,712249	9,107914	8,559479
16	11,234015	10,837770	10,105895	9,446649	8,851369
17	11,707191	11,274066	10,477260	9,763223	9,121638
18	12,159992	11,689587	10,827603	10,059087	9,371887
19	12,593294	12,085321	11,158116	10,335595	9,603599
20	13,007936	12,462210	11,469921	10,594014	9,818147
21	13,404724	12,821153	11,764077	10,835527	10,016803
22	13,784425	13,163003	12,041582	11,061241	10,200744
23	14,147775	13,488574	12,303379	11,272187	10,371059
24	14,495478	13,798642	12,550358	11,469334	10,528758
25	14,828209	14,093945	12,783356	11,653583	10,674776
26	15,146611	14,375185	13,003166	11,825779	10,809978
27	15,451303	14,643034	13,210534	11,986709	10,935165
28	15,742874	14,898127	13,406164	12,137111	11,051078
29	16,021889	15,141074	13,590721	12,277674	11,158406
30	16,288889	15,372451	13,764831	12,409041	11,257783
31	16,544391	15,592811	13,929086	12,531814	11,349799
32	16,788891	15,802677	14,084043	12,646555	11,434999
33	17,022862	16,002549	14,230230	12,753790	11,513888
34	17,246758	16,192904	14,368141	12,854009	11,586934
35	17,461012	16,374194	14,498246	12,947672	11,654568
36	17,666041	16,546852	14,620987	13,035208	11,717193
37	17,862240	16,711287	14,736780	13,117017	11,775179
38	18,049990	16,867893	14,846019	13,193473	11,828869
39	18,229656	17,017041	14,949075	13,264928	11,878582
40	18,401584	17,159086	15,046297	13,331709	11,924613
41	18,566109	17,294368	15,138016	13,394120	11,967235
42	18,723550	17,423208	15,224543	13,452449	12,006699
43	18,874210	17,545912	15,306173	13,506962	12,043240
44	19,018383	17,662773	15,383182	13,557908	12,077074
45	19,156347	17,774070	15,455832	13,605522	12,108402
46	19,288371	17,880067	15,524370	13,650020	12,137409
47	19,414709	17,981016	15,589028	13,691608	12,164267
48	19,535607	18,077158	15,650027	13,730474	12,189136
49	19,651298	18,168722	15,707572	13,766799	12,212163
50	19,762008	18,255925	15,761861	13,800746	12,233485
51	19,867950	18,338977	15,813076	13,832473	12,253227
52	19,969330	18,418073	15,861393	13,862124	12,271506
53	20,066345	18,493403	15,906974	13,889836	12,288432
54	20,159181	18,565146	15,949976	13,915735	12,304103
55	20,248021	18,633472	15,990543	13,939939	12,318614
56	20,333034	18,698545	16,028814	13,962560	12,332050
57	20,414387	18,760519	16,064919	13,983701	12,344491
58	20,492236	18,819542	16,098980	14,003459	12,356010
59	20,566733	18,875754	16,131113	14,021924	12,366676
60	20,638022	18,929290	16,161428	14,039181	12,376552
N.	4½ per C.	5 per C.	6 per C.	7 per C.	8 per C.

E. <i>The Present Value of 1 l. per Annum for a single Life.</i>			F. <i>Logarithms of E.</i>			G. <i>Logarithms of E.+1.</i>		
1 4 p. C.	5 p. C.	6 p. C.	A. 4 p. C.	5 p. C.	6 p. C.	4 p. C.	5 p. C.	6 p. C.
1 13,359	11,966	10,807	1,12578	,07795	,03371	,15712	,11280	,07214
2 14,549	12,885	11,530	2,16283	,11008	,06183	,19170	,14254	,09796
3 15,437	13,555	12,045	3,18856	,13210	,08081	,21582	,16301	,11544
4 15,891	13,891	12,301	4,20115	,14273	,08994	,22765	,17292	,12388
5 16,209	14,123	12,476	5,20976	,14993	,09608	,23575	,17964	,12956
6 16,508	14,342	12,639	6,21770	,15661	,10171	,24323	,18588	,13478
7 16,698	14,480	12,741	7,22267	,16077	,10520	,24792	,18978	,13802
8 16,791	14,544	12,790	8,22508	,16268	,10687	,25020	,19156	,13957
9 16,882	14,607	12,839	9,22742	,16456	,10853	,25242	,19332	,14110
10 16,882	14,607	12,839	10,22742	,16456	,10853	,25242	,19332	,14110
11 16,791	14,544	12,790	11,22508	,16268	,10687	,25020	,19156	,13957
12 16,698	14,480	12,741	12,22267	,16077	,10520	,24792	,18978	,13802
13 16,604	14,412	12,691	13,22021	,15872	,10350	,24561	,18786	,13643
14 16,508	14,342	12,639	14,21770	,15661	,10171	,24323	,18588	,13478
15 16,410	14,271	12,586	15,21511	,15445	,09989	,24080	,18387	,13309
16 16,311	14,197	12,532	16,21248	,15220	,09802	,23832	,18176	,13136
17 16,209	14,123	12,476	17,20976	,14993	,09608	,23575	,17964	,12956
18 16,105	14,047	12,419	18,20696	,14758	,09409	,23312	,17745	,12772
19 15,999	13,970	12,361	19,20409	,14520	,09205	,23042	,17523	,12584
20 15,891	13,891	12,301	20,20115	,14273	,08994	,22765	,17292	,12388
21 15,781	13,810	12,239	21,19813	,14019	,08775	,22482	,17056	,12185
22 15,669	13,727	12,177	22,19504	,13758	,08554	,22191	,16811	,11981
23 15,554	13,642	12,112	23,19184	,13488	,08322	,21890	,16560	,11767
24 15,437	13,555	12,045	24,18856	,13210	,08081	,21582	,16301	,11544
25 15,318	13,466	11,978	25,18520	,12924	,07838	,21266	,16035	,11321
26 15,197	13,375	11,908	26,18176	,12629	,07584	,20943	,15761	,11086
27 15,073	13,282	11,837	27,17820	,12326	,07324	,20609	,15479	,10846
28 14,946	13,186	11,763	28,17453	,12011	,07052	,20265	,15186	,10595
29 14,816	13,088	11,688	29,17073	,11687	,06774	,19909	,14885	,10339
30 14,684	12,988	11,610	30,16684	,11354	,06483	,19545	,14575	,10072
31 14,549	12,885	11,530	31,16283	,11008	,06183	,19170	,14254	,09796
32 14,411	12,780	11,449	32,15869	,10653	,05877	,18783	,13925	,09513
33 14,270	12,673	11,365	33,15442	,10288	,05557	,18384	,13586	,09219
34 14,126	12,562	11,278	34,15002	,09906	,05223	,17972	,13232	,08913
35 13,979	12,449	11,189	35,14548	,09513	,04879	,17548	,12869	,08597
36 13,829	12,333	11,098	36,14079	,09107	,04524	,17111	,12493	,08271
37 13,676	12,214	11,003	37,13596	,08686	,04151	,16661	,12103	,07929
38 13,519	12,091	10,907	38,13094	,08246	,03771	,16193	,11697	,07580
39 13,359	11,966	10,807	39,12577	,07795	,03371	,15712	,11280	,07214
40 13,196	11,837	10,704	40,12044	,07324	,02955	,15216	,10846	,06833
41 13,028	11,705	10,599	41,11488	,06837	,02526	,14698	,10397	,06442
42 12,858	11,570	10,490	42,10917	,06333	,02078	,14170	,09934	,06033
43 12,683	11,431	10,378	43,10322	,05808	,01611	,13618	,09450	,05600
A. 4 p. C.	5 p. C.	6 p. C.	A. 4 p. C.	5 p. C.	6 p. C.	4 p. C.	5 p. C.	6 p. C.
			L,01703	,02119	,02531			

E.
The Present Value of
1 l. per Annum
for a single Life.

F.
Logarithms of
E.

G.
Logarithms of
E+1.

A.	4 p. C.	5 p. C.	6 p. C.	A.	4 p. C.	5 p. C.	6 p. C.	A.	4 p. C.	5 p. C.	6 p. C.	A.
44	12,504	11,288	10,263	44	,09705	,05262	,01127	,13046	,08948	,05165	44	
45	12,322	11,142	10,144	45	,09068	,04696	,00621	,12457	,08429	,04704	45	
46	12,135	10,992	10,021	46	,08404	,04108	,00091	,11843	,07889	,04222	46	
47	11,944	10,837	9,895	47	,07715	,03491	,99542	,11207	,07324	,03723	47	
48	11,748	10,679	9,765	48	,06996	,02853	,98967	,10544	,06740	,03201	48	
49	11,548	10,515	9,630	49	,06251	,02181	,98363	,09857	,06126	,02654	49	
50	11,344	10,348	9,492	50	,05477	,01486	,97736	,09145	,05492	,02086	50	
51	11,135	10,176	9,349	51	,04669	,00758	,97077	,08404	,04829	,01490	51	
52	10,921	9,999	9,201	52	,03826	,99996	,96384	,07631	,04135	,00864	52	
53	10,702	9,817	9,049	53	,02946	,99198	,95660	,06826	,03411	,00212	53	
54	10,478	9,630	8,891	54	,02028	,98363	,94895	,05987	,02654	,99525	54	
55	10,248	9,437	8,729	55	,01064	,97483	,94096	,05107	,01857	,98807	55	
56	10,014	9,239	8,561	56	,00061	,96563	,93252	,04194	,01026	,98051	56	
57	9,773	9,036	8,387	57	,99003	,95598	,92361	,03234	,00156	,97253	57	
58	9,527	8,826	8,208	58	,97896	,94576	,91424	,02230	,99238	,96417	58	
59	9,275	8,611	8,023	59	,96731	,93505	,90434	,01178	,98277	,95536	59	
60	9,017	8,389	7,831	60	,95506	,92371	,89382	,00074	,97262	,94601	60	
61	8,753	8,161	7,633	61	,94216	,91174	,88270	,98914	,96195	,93617	61	
62	8,482	7,926	7,428	62	,92850	,89905	,87087	,97690	,95066	,92573	62	
63	8,205	7,684	7,216	63	,91408	,88559	,85830	,96403	,93872	,91467	63	
64	7,921	7,435	6,997	64	,89878	,87128	,84491	,95042	,92609	,90293	64	
65	7,631	7,179	6,770	65	,88258	,85606	,83059	,93607	,91271	,89043	65	
66	7,333	6,915	6,535	66	,86528	,83979	,81525	,92081	,89846	,87709	66	
67	7,027	6,643	6,292	67	,84677	,82236	,79879	,90456	,88327	,86285	67	
68	6,714	6,362	6,040	68	,82698	,80359	,78104	,88728	,86700	,84758	68	
69	6,394	6,073	5,779	69	,80577	,78340	,76185	,86888	,84961	,83117	69	
70	6,065	5,775	5,508	70	,78283	,76155	,74099	,84912	,83091	,81345	70	
71	5,728	5,468	5,228	71	,75800	,73783	,71834	,82789	,81078	,79435	71	
72	5,383	5,152	4,937	72	,73102	,71198	,69346	,80503	,78902	,77357	72	
73	5,029	4,826	4,636	73	,70148	,68359	,66614	,78025	,76538	,75098	73	
74	4,666	4,489	4,324	74	,66894	,65215	,63589	,75328	,73950	,72624	74	
75	4,293	4,143	4,000	75	,63276	,61731	,60206	,72371	,71112	,69900	75	
76	3,912	3,784	3,664	76	,59240	,57795	,56396	,69126	,67980	,66876	76	
77	3,520	3,415	3,315	77	,54654	,53339	,52048	,65514	,64494	,63499	77	
78	3,119	3,034	2,953	78	,49402	,48202	,47026	,61480	,60574	,59693	78	
79	2,707	2,641	2,578	79	,43249	,42177	,41128	,56903	,56123	,55365	79	
80	2,284	2,235	2,188	80	,35870	,34928	,34005	,51641	,50988	,50352	80	
81	1,851	1,816	1,783	81	,26741	,25912	,25115	,45500	,44964	,44452	81	
82	1,406	1,384	1,363	82	,14799	,14114	,13450	,38130	,37731	,37347	82	
83	0,949	0,937	0,926	83	,97727	,97174	,96661	,28982	,28713	,28466	83	
84	0,481	0,476	0,472	84	,68215	,67761	,67394	,17056	,16909	,16791	84	
85	0,000	0,000	0,000	85							85	
86	0,000	0,000	0,000	86							86	
A.	4 p. C.	5 p. C.	6 p. C.	A.	4 p. C.	5 p. C.	6 p. C.	A.	4 p. C.	5 p. C.	6 p. C.	A.

TABLE VII.

Auxiliary to Table II. and III.

	H	2H	3H	4H	5H	6H	7H	8H	9H
per C.	1,004963	,009926	,014889	,019852	,024815	,029778	,034741	,039704	,044667
	2,009950	,019900	,029850	,039800	,049750	,059700	,069650	,079600	,089550
	3,014963	,029926	,044889	,059852	,074815	,089778	,104741	,119704	,134667
2½	1,006192	,012384	,018576	,024768	,030960	,037152	,043344	,049536	,055728
	2,012423	,024846	,037269	,049692	,062115	,074538	,086961	,099384	,111807
	3,018692	,037384	,056076	,074768	,093460	,112152	,130844	,149536	,168228
3	1,007417	,014834	,022251	,029668	,037085	,044502	,051919	,059336	,066753
	2,014889	,029778	,044667	,059556	,074445	,089334	,104223	,119112	,134001
	3,022417	,044832	,067248	,089664	,112080	,134496	,156912	,179328	,201744
3½	1,008637	,017274	,025911	,034548	,043185	,051822	,060459	,069096	,077733
	2,017319	,034698	,052047	,069396	,086745	,104094	,121443	,138792	,156141
	3,026137	,052274	,078411	,104548	,130685	,156822	,182959	,209096	,235233
4	1,009853	,019706	,029559	,039412	,049265	,059118	,068971	,078824	,088677
	2,019804	,039608	,059412	,079216	,099020	,118824	,138628	,158432	,178236
	3,029852	,059704	,089556	,119408	,149260	,179112	,208964	,238816	,268668
4½	1,011065	,022130	,033195	,044260	,055325	,066390	,077455	,088520	,099585
	2,022252	,044504	,066756	,089008	,111260	,133512	,155764	,178016	,200268
	3,033564	,067128	,100692	,134256	,167820	,201384	,234948	,268512	,302076
5	1,012272	,024544	,036816	,049088	,061360	,073632	,085904	,098176	,110448
	2,024695	,049390	,074085	,098780	,123475	,148170	,172865	,197560	,222255
	3,037270	,074540	,111810	,149080	,186350	,223620	,260890	,298160	,335430
6	1,014674	,029348	,044022	,058696	,073370	,088044	,102718	,117392	,132066
	2,029563	,059126	,088689	,118252	,147815	,177378	,206941	,236504	,266067
	3,044671	,089342	,134013	,178684	,223355	,268026	,312697	,357368	,402039
7	1,017058	,034116	,051174	,068232	,085290	,102348	,119406	,136464	,153522
	2,034408	,068816	,103224	,137632	,172040	,206448	,240856	,275264	,309672
	3,052053	,104106	,156159	,208212	,260265	,312318	,364371	,416424	,468477
8	1,019426	,038852	,058278	,077704	,097130	,116556	,135982	,155408	,174834
	2,039230	,078460	,117690	,156920	,196150	,235380	,274610	,313840	,353070
	3,059419	,118838	,178257	,237676	,297095	,356514	,415933	,475352	,534771

TABLE VIII.

Auxiliary to Table IV, V, and VI.

	K	2K	3K	4K	5K	6K	7K	8K	9K
per C.	a,007469	,014938	,022407	,029876	,037345	,044814	,052283	,059752	,067221
	b,004975	,009950	,014925	,019900	,024875	,029850	,034825	,039800	,044775
2½	a,009327	,018654	,027981	,037308	,046635	,055962	,065289	,074616	,083943
	b,006211	,012422	,018633	,024844	,031055	,037266	,043477	,049688	,055899
3	a,011181	,022362	,033543	,044724	,055905	,067086	,078267	,089448	,100629
	b,007445	,014890	,022335	,029780	,037225	,044670	,052115	,059560	,067005
3½	a,013031	,026062	,039093	,052124	,065155	,078186	,091217	,104248	,117279
	b,008675	,017350	,026025	,034700	,043375	,052050	,060725	,069400	,078075
4	a,014871	,029754	,044631	,059508	,074385	,089262	,104139	,119016	,133893
	b,009902	,019804	,029706	,039608	,049510	,059412	,069314	,079216	,089118
4½	a,016720	,033440	,050160	,066880	,083600	,100320	,117040	,133760	,150480
	b,011126	,022252	,033378	,044504	,055630	,066756	,077882	,089008	,100134
5	a,018559	,037118	,055677	,074236	,092795	,111354	,129913	,148472	,167031
	b,012348	,024696	,037044	,049392	,061740	,074088	,086436	,098784	,111132
6	a,022227	,044454	,066681	,088908	,111135	,133362	,155589	,177816	,200043
	b,014781	,029562	,044343	,059124	,073905	,088686	,103467	,118248	,133029
7	a,025880	,051760	,077640	,103520	,129400	,155280	,181160	,207040	,232920
	b,017204	,034408	,051612	,068816	,086020	,103224	,120428	,137632	,154836
8	a,029519	,059038	,088557	,118076	,147595	,177114	,206633	,236152	,265671
	b,019870	,039740	,059610	,079480	,099350	,119220	,139090	,158960	,178830

Put *G* for the Interest of 1 *l.* for any Time at any Rate specified in *Tab. I.*

Thus, if the Rate is 5 *l. per Cent. per Ann.* and the Time 7 Years, 5 Months, 27 Days.

For 7 Years — — — *G* is ,35
 For 5 Months — — — *G* is ,020833
 For 20 Days — — — *G* is ,002740
 For 7 Days — — — *G* is ,000959

And for 7 Years, 5 Mon. 27 Days *G* is ,374532

The Cases of a Sum of Money at Simple Interest, solved by the Table.

Ca.	Given.	Requir.	Preparation.	Solution.
1	Sum, Time, Rate.	Interest.	Time and Rate give <i>G</i> .	Sum multiplied by <i>G</i> , gives the Interest.
2	Sum, Time, Rate.	Present Value.	Time and Rate give <i>G</i> .	Sum divided by <i>G</i> more 1, gives the Present Value.
3	Sum, Time, Rate.	Discompt.	Time and Rate give <i>G</i> .	Sum multpl. by <i>G</i> , Prod. divided by <i>G</i> more 1, gives the Discompt.
4	Sum, Time, Rate.	Amount	Time and Rate give <i>G</i> .	Sum multiplied by <i>G</i> increased by 1, gives the Amount.
5	Sum, Rate, Pref. Val.	Time.	Sum divided by the Pref. Val. and lessened by 1, gives <i>G</i> .	Rate and <i>G</i> give the Time.
6	Sum, Time, Pref. Val.	Rate.	Sum divided by the Pref. Val. and lessened by 1, gives <i>G</i> .	Time and <i>G</i> give the Rate.

Examples.

1. What is the Interest of 500 *l.* for 16 Years, at 5 *l. per Cent. per Ann.*?
 Here *G* is ,8 per Table; and the Interest is $(500 \times ,8 =) 400 \text{ l.}$
2. What is the Present Value of 900 *l.* due 16 Years hence, at 5 *l. per Cent. per Ann.*?

Here *G* increased by 1 is 1,8; and the Pref. Worth is $\left(\frac{900}{1,8} =\right) 500 \text{ l.}$

3. What is the Discompt of 900 *l.* due 16 Years hence, at 5 *l. per Cent. per Ann.*?

Here $G = ,8$; $G + 1 = 1,8$; and the Discompt is $\left(\frac{0,8}{1,8} \times 900 =\right) 400 \text{ l.}$

4. What is the Amount of 500 *l.* in 16 Years, at 5 *l. per Cent. per Ann.*?

Here $G + 1 = 1,8$; and the Amount is $(500 \times 1,8 =) 900 \text{ l.}$

5. In what Time will 500 *l.* at 5 *l. per Cent. per Ann.* become 900 *l.*?

Here $\frac{900}{500} = 1,8 = G + 1$, and *G* is ,8; and the Rate (5 *l.*) and *G* give the Time, 16 Years.

6. At what Rate will 500 *l.* in 16 Years become 900 *l.*?

Here $\frac{900}{500} = 1,8 = G + 1$, and *G* is ,8; and the Time (16 Years) and *G* give the Rate, 5 *l. per Cent. per Ann.*

Put n , for any Time ; r , any Rate specified in the Tables ; A , B , C , D , the several Numbers given by n and r in the II^d, III^d, IVth, and Vth Tables ; a , any Annuity, Rent, or Pension ; p , a Principal Sum, or Present Value ; m , the Amount of any Debt or Annuity. Then,

G.	Given	Re.	Preparation.	Solution.
1	$a, n, r.$	$m.$	$n.$ & $r.$ give $C.$	$m = aC.$
2	$p, n, r.$	$m.$	$n.$ & $r.$ give $A.$	$m = pA.$
3	$a, p, r.$	$m.$	$\frac{p}{a} = D ; r.$ & $D.$ give $n ; r.$ & $n.$ give $A.$	$m = pA.$
4	$a, p, n.$	$m.$	$\frac{p}{n} = D ; n.$ & $D.$ give $r ; r.$ & $n.$ give $A.$	$m = pA.$
5	$a, n, r.$	$p.$	$n.$ & $r.$ give $D.$	$p = aD.$
6	$m, n, r.$	$p.$	$n.$ & $r.$ give $B.$	$p = mB.$
7	$a, m, n.$	$p.$	$\frac{m}{a} = C ; n.$ & $C.$ give $r ; r.$ & $n.$ give $D.$	$p = aD.$
8	$a, m, r.$	$p.$	$\frac{m}{a} = C ; r.$ & $C.$ give $n ; r.$ & $n.$ give $D.$	$p = aD.$
9	$p, n, r.$	$a.$	$n.$ & $r.$ give $D.$	$a = \frac{n}{D}$
10	$p, m, n.$	$a.$	$\frac{m}{p} = A ; n.$ & $A.$ give $r ; n.$ & $r.$ give $C.$	$a = \frac{m}{C}.$
11	$m, n, r.$	$a.$	$n.$ & $r.$ give $C.$	$a = \frac{m}{C}.$
12	$p, m, r.$	$a.$	$\frac{m}{p} = A ; r.$ & $A.$ give $n ; n.$ & $r.$ give $C.$	$a = \frac{m}{C}.$
13	$p, m, r.$	$n.$	$\frac{m}{p} = A ; - - - - - r.$ & $A.$ give $n.$	
14	$a, p, r.$	$n.$	$\frac{p}{a} = D ; - - - - - r.$ & $D.$ give $n.$	
15	$a, p, m.$	$n.$	$\frac{m}{p} = A ; \frac{m}{a} = C ; \frac{A - 1 \times 100}{C} = r ; r.$ & $A.$ give $n.$	
16	$a, m, r.$	$n.$	$\frac{m}{a} = C ; - - - - - r.$ & $C.$ give $n.$	
17	$a, p, m.$	$r.$	$\frac{m}{p} = A ; \frac{m}{a} = C ;$	$r = \frac{A - 1 \times 100}{C}$
18	$p, m, n.$	$r.$	$\frac{m}{p} = A ; - - - - - n.$ & $A.$ give $r.$	
19	$a, m, n.$	$r.$	$\frac{m}{a} = C ; - - - - - n.$ & $C.$ give $r.$	
20	$a, p, n.$	$r.$	$\frac{p}{a} = D ; - - - - - n.$ & $D.$ give $r.$	

Put n = Time of Continuance ; N = Time of Commencement.

C.	Given.	R.	Preparation.	Solution.
21	$a.r.n.N.$	$p.$	$N \& r.$ gives D ; $n + N \& r$ gives Δ .	$p = a \times \Delta - D$
22	$p.r.n.N$	a	$N \& r.$ give D ; $n + N \& r.$ give Δ .	$a = \frac{p}{\Delta - D}$
23	$a.p.r.N.$	n	$N \& r.$ give A ; $pA = m$; $\frac{m}{a} = D$; $D \& r.$ give n .	
24	$a.p.r.n.$	N	$n \& r$ give D ; $aD = m$; $\frac{m}{p} = A$; $A \& r.$ give N .	

FREEHOLD ESTATES in Reversion.

25	$a. r. N.$	$p. r. \& n.$	give $B.$	$p = \frac{100aB}{r}$
26	$p. r. N.$	$a. r. \& n.$	give $A.$	$a = \frac{pAr}{100}$
27	$p. a. r. N.$	$\frac{100a}{pr} = A$;	$- - - A \& r.$	give $N.$

28. To find the Amount (m) of any Sum of Money (p), for Years (n) and Quarters of a Year (q), at any Rate of compound Interest specified in the Tables (r).

Now (Tab. 2.) $n. \& r.$ give A ; (Tab. 7.) $q. \& r.$ give H .
And $A' = A \times \overline{H+1}$: Then $m. = p. A'$.

EXAMPLE.

What is the Amount of 100 l . forborn $7\frac{3}{4}$ Years at $4\frac{1}{2} l.$ per Cent. Compound Interest?

The Operation.

$$\begin{aligned}
 A &= 1,360862 \quad (= 1 + \frac{3}{100} + \frac{6}{1000} + \frac{8}{10000} + \frac{6}{100000} \text{ \&c.}) \\
 H &= 33564 = 1 H \\
 &10069 = \frac{1}{100} 3 H \\
 &2014 = \frac{1}{1000} 6 H \\
 &27 = \frac{1}{10000} 8 H \\
 &2 = \frac{1}{100000} 6 H
 \end{aligned}$$

$$A' = 1,406538$$

And ($m = pA' = 1,406538 \times 100 =$) 140,6538 $l.$ is the Amount required.

29. To find the Present Value (p) of any Sum of Money (m), due at the End of (n) Years, and (q) Quarters of a Year, at the Rate (r).

Now (Tab. 3.) $\overline{n+1}$ & r . give B ; (Tab. 7.) $4-\overline{q}$ & r . give H ; and $B' = B \times \overline{H+1}$: Then $p = mB'$.

EXAMPLE.

What is the Present Worth of 140,6538 $l.$ due at the End of $7\frac{3}{4}$ Years at $4\frac{1}{2}$ per Cent. Compound Interest?

$$\begin{array}{rcl} 8. \text{ \& } 4\frac{1}{2}. \text{ give } B & = 0,703185 & (= \frac{7}{10} + \frac{3}{1000} + \frac{2}{10000} \cdot) \\ 1 \text{ \& } 4\frac{1}{2} \text{ give } H & \left. \begin{array}{l} 7746 \\ = 0,011065 \end{array} \right\} & \begin{array}{l} = \frac{1}{107} H \\ 33 = \frac{1}{1000} 3 H \\ 2 = \frac{1}{10000} 2 H \end{array} \end{array}$$

$$\underline{B' = 0,710966}$$

And ($p = mB' = 0,710966 \times 140,6538 =$) 100 $l.$ = Present Value required.

30. To find the Amount (m) of any Annuity (a), payable by equal half yearly (h) or quarterly (q) Payments, for any Number of Years (n) the Rate (r).

Now (Tab. 4.) n . & r . give C ; (Tab. 8.) h . or q . and r . give K ; and $C' = C \times \overline{K+1}$: Then $m = aC'$.

EXAMPLE.

What will an Annuity of 100 $l.$ per Ann. payable quarterly for 7 Years, amount to at $4\frac{1}{2}$ per Cent. per Annum?

$$\begin{array}{rcl} C = 8,019151 & \text{And } K = ,016720 \\ 133760 & = 8 K \\ 167 & = \frac{1}{100} K \\ 150 & = \frac{1}{1000} 9 K \\ 3 & = \frac{1}{10000} 2 K \end{array}$$

$$\underline{8,153231 = C'}$$

And ($m = aC' = 8,153231 \times 100 =$) 815,3231 $l.$ the Amount required.

31. To

31. To find the Present Worth (p) of any Annuity (a), payable by equal half yearly (h) or quarterly (q) Payments, for any Number of Years (n) at the Rate (r).

Now (Tab. 5.) n & r . give D ; (Tab. 8.) h . or q . & r . give K ; and $D' = D \times \frac{K+1}{K}$: Then, $p = aD'$.

EXAMPLE.

What is the Present Worth of an Annuity of 100 *l.* per Ann. payable quarterly for 7 Years, at $4\frac{1}{2}$ per Cent. per Annum?

$$D = 5,892,701 \quad \text{And } K = ,016720$$

$$83600 = 5 K$$

$$13376 = \frac{1}{10} 8 K$$

$$1505 = \frac{1}{100} 9 K$$

$$33 = \frac{1}{1000} 2 K$$

$$12 = \frac{1}{10000} 7 K$$

$$5,991,227 \quad D'$$

And ($p = aD' = 5,991,227 \times 100 =$) 599,1227 *l.* the Present Worth required.

32. To find the present Value (p) of any Annuity (a), to continue during a Life of a given Age (y), at any Rate of Interest specified in Tab. 6.

Now y . & r . give E in (Tab. 6.) ; Then, $p = aE$.

33. To find the present Value (p'' & P'') of any Annuity (a) to continue during the Life of the shortest and longest Liver, of two Persons of the Ages y' and y'' ; at any Rate of Interest specified in Tab. 6.

Now, (Tab. 6.) y' . & r . give E' ; y'' . & r . give E'' ;
And $E' + E'' = M$:

(Tab. 6.) L . & r . give R ; y' . & r . give F' ; y'' & r . give F'' ;
And $F' + F'' + R = X$:

y' . & r . give G' ; y'' & r . give G'' ; and $G' + G'' = Z$:

The Numbers to the Logarithms X , Z , are x , z ; let $Q = \frac{x}{z-x}$:

Then, $p'' = aQ$; and $P'' = \overline{M - Q} \times a$.

34. To find the Present Value (p''' and P''') of any Annuity (a) to continue during the Life of the shortest and longest Liver of three Persons of the Ages y' , y'' and y''' ; at any Rate of Interest specified in Tab. 6.

Now in Tab. 6. y' & r . give E' , F' , and G' ;
 y'' & r . give E'' , F'' , and G'' ;
 y''' & r . give E''' , F''' , and G''' ;
 L & r . give R : Put $E' + E'' + E''' = M$:

$$\begin{aligned} \text{And, } F' + F'' + R &= X': & \text{Also, } G' + G'' &= Z': \\ F' + F'' + R &= X'': & G' + G'' &= Z'': \\ F'' + F''' + R &= X''': & G'' + G''' &= Z''': \\ F' + F'' + F''' + 2R &= X''': & G' + G'' + G''' &= Z''': \end{aligned}$$

The Number of the Logarithms X' , X'' , X''' , X'''' , and Z' , Z'' , Z''' , Z'''' , are x' , x'' , x''' , x'''' , and z' , z'' , z''' , z'''' ;

$$\text{Let } Q' = \frac{x'}{z' - x'}; Q'' = \frac{x''}{z'' - x''}; Q''' = \frac{x'''}{z''' - x'''}; Q'''' = \frac{x''''}{z'''' - x''''};$$

$$\text{And } S = Q' + Q'' + Q''':$$

$$\text{Then, } p''' = aQ''''; \text{ and } P''' = \overline{M + Q'''' - S} \times a.$$

EXAMPLE.

What is the Present Worth of an Annuity of 100 *l.* payable during the Life of the longest Liver of 3 Men, whose Ages are 40, 37, 34 Years, allowing Interest at 5 per Cent.?

(Tab. 6.) $R = 0,02119$.

$$E' = 11,837. F' = 1,07324. X' = 2,18129. G' = 1,10846. Z' = 2,22949.$$

$$E'' = 12,214. F'' = 1,08686. X'' = 2,19349. G'' = 1,12103. Z'' = 2,24078.$$

$$E''' = 12,562. F''' = 1,09906. X''' = 2,20711. G''' = 1,13232. Z''' = 2,25335.$$

$$M = 36,613. R = 0,02119. X'''' = 3,30154. Z'''' = 3,36181.$$

$$Q' = \left(\frac{x'}{z' - x'} = \frac{151,81}{169,63 - 151,81} = \frac{151,81}{17,82} = \right) 8,519$$

$$Q'' = \left(\frac{x''}{z'' - x''} = \frac{156,13}{174,09 - 156,13} = \frac{156,13}{17,96} = \right) 8,693$$

$$Q''' = \left(\frac{x'''}{z''' - x'''} = \frac{161,11}{179,21 - 161,11} = \frac{161,11}{18,10} = \right) 8,901$$

$$S = (Q' + Q'' + Q''') = \overline{26,113}$$

$$Q'''' = \left(\frac{x''''}{z'''' - x''''} = \frac{2002,3}{2300,4 - 2002,3} = \frac{2002,3}{298,1} = \right) 6,717$$

$$Q'''' + M = \overline{43,330}$$

$$M + Q'''' - S = \overline{17,217}$$

And ($P''' = M + Q'''' - S \times a = 17,217 \times 100 =$) 1721,7 *l.* the Present Worth required.

35. To find the Present Value (p) of any Annuity (a) for one or more Lives, when payable by equal half Yearly (h) or Quarterly (q) Payments.

(Tab. 8.) h , or q , & r . give K . Put W for the Present Worth of (a) at Yearly Payments found by Case 32. 33. or 34.

$$\text{Then } p = W \times K + 1.$$

EXAMPLE.

What is the Present Worth of an Annuity of 100 l . payable Quarterly during the Life of the longest Liver of three Men whose Ages are 40, 37 and 34 Years allowing Interest at 5 l . per Cent?

By the preceeding Exam. $W = 1721,7$ And (Tab. 8.) $K = ,018559$

$$18,6 = 1000 \times K$$

$$13,0 = 100 \times 7 K$$

$$,4 = 10 \times 2 K$$

$$l. 1753,7 = \text{Present Worth required.}$$



TABLE

R	D	2D	3D	4D	5D	6D	7D	8D	9D
0: 5	1,0025	2,005	3,0075	4,0	5,0125	6,015	7,0175	8,02	9,0225
0: 10	1,005	2,01	3,015	4,02	5,025	6,03	7,035	8,04	9,045
0: 15	1,0075	2,015	3,0225	4,03	5,0375	6,045	7,0525	8,06	9,0675
1: 0	1,01	2,02	3,03	4,04	5,05	6,06	7,07	8,08	9,09
1: 5	1,0125	2,025	3,0375	4,05	5,0625	6,075	7,0875	8,10	9,1125
1: 10	1,015	2,03	3,045	4,06	5,075	6,09	7,105	8,12	9,135
1: 15	1,0175	2,035	3,0525	4,07	5,0875	6,105	7,1225	8,14	9,1575
2: 0	1,02	2,04	3,06	4,08	5,10	6,12	7,14	8,16	9,18
2: 5	1,0225	2,045	3,0675	4,09	5,1125	6,135	7,1575	8,18	9,2025
2: 10	1,025	2,05	3,075	4,10	5,125	6,15	7,175	8,20	9,225
2: 15	1,0275	2,055	3,0825	4,11	5,1375	6,165	7,1925	8,22	9,2475
3: 0	1,03	2,06	3,09	4,12	5,15	6,18	7,21	8,24	9,27
3: 5	1,0325	2,065	3,0975	4,13	5,1625	6,195	7,2275	8,26	9,2925
3: 10	1,035	2,07	3,105	4,14	5,175	6,21	7,245	8,28	9,315
3: 15	1,0375	2,075	3,1125	4,15	5,1875	6,225	7,2625	8,30	9,3375
4: 0	1,04	2,08	3,12	4,16	5,20	6,24	7,28	8,32	9,36
4: 5	1,0425	2,085	3,1275	4,17	5,2125	6,255	7,2975	8,34	9,3825
4: 10	1,045	2,09	3,135	4,18	5,225	6,27	7,315	8,36	9,405
4: 15	1,0475	2,095	3,1425	4,19	5,2375	6,285	7,3325	8,38	9,4275
5: 0	1,05	2,10	3,15	4,20	5,25	6,30	7,35	8,40	9,45
5: 5	1,0525	2,105	3,1575	4,21	5,2625	6,315	7,3675	8,42	9,4725
5: 10	1,055	2,11	3,165	4,22	5,275	6,33	7,385	8,44	9,495
5: 15	1,0575	2,115	3,1725	4,23	5,2875	6,345	7,4025	8,46	9,5175
6: 0	1,06	2,12	3,18	4,24	5,30	6,36	7,42	8,48	9,54
6: 5	1,0625	2,125	3,1875	4,25	5,3125	6,375	7,4375	8,50	9,5625
6: 10	1,065	2,13	3,195	4,26	5,325	6,39	7,455	8,52	9,585
6: 15	1,0675	2,135	3,2025	4,27	5,3375	6,405	7,4725	8,54	9,6075
7: 0	1,07	2,14	3,21	4,28	5,35	6,42	7,49	8,56	9,63
7: 5	1,0725	2,145	3,2175	4,29	5,3625	6,435	7,5075	8,58	9,6525
7: 10	1,075	2,15	3,225	4,30	5,375	6,45	7,525	8,60	9,675
7: 15	1,0775	2,155	3,2325	4,31	5,3875	6,465	7,5425	8,62	9,6975
8: 0	1,08	2,16	3,24	4,32	5,40	6,48	7,56	8,64	9,72
8: 5	1,0825	2,165	3,2475	4,33	5,4125	6,495	7,5775	8,66	9,7425
8: 10	1,085	2,17	3,255	4,34	5,425	6,51	7,595	8,68	9,765
8: 15	1,0875	2,175	3,2625	4,35	5,4375	6,525	7,6125	8,70	9,7875
9: 0	1,09	2,18	3,27	4,36	5,45	6,54	7,63	8,72	9,81
9: 5	1,0925	2,185	3,2775	4,37	5,4625	6,555	7,6475	8,74	9,8325
9: 10	1,095	2,19	3,285	4,38	5,475	6,57	7,665	8,76	9,855
9: 15	1,0975	2,195	3,2925	4,39	5,4875	6,585	7,6825	8,78	9,8775
10: 0	1,10	2,20	3,30	4,40	5,50	6,60	7,70	8,80	9,90
10: 5	1,1025	2,205	3,3075	4,41	5,5125	6,615	7,7175	8,82	9,9225
10: 10	1,105	2,21	3,315	4,42	5,525	6,63	7,735	8,84	9,945
10: 15	1,1075	2,215	3,3225	4,43	5,5375	6,645	7,7525	8,86	9,9675
11: 0	1,11	2,22	3,33	4,44	5,55	6,66	7,77	8,88	9,99
11: 5	1,1125	2,225	3,3375	4,45	5,5625	6,675	7,7875	8,90	10,0125
11: 10	1,115	2,23	3,345	4,46	5,575	6,69	7,805	8,92	10,035
11: 15	1,1175	2,235	3,3525	4,47	5,5875	6,705	7,8225	8,94	10,0575
12: 0	1,12	2,24	3,36	4,48	5,60	6,72	7,84	8,96	10,08
12: 5	1,1225	2,245	3,3675	4,49	5,6125	6,735	7,8575	8,98	10,1025
12: 10	1,125	2,25	3,375	4,50	5,625	6,75	7,875	9,00	10,125
12: 15	1,1275	2,255	3,3825	4,51	5,6375	6,765	7,8925	9,02	10,1475
13: 0	1,13	2,26	3,39	4,52	5,65	6,78	7,91	9,04	10,17
13: 5	1,1325	2,265	3,3975	4,53	5,6625	6,795	7,9275	9,06	10,1925
13: 10	1,135	2,27	3,405	4,54	5,675	6,81	7,945	9,08	10,215
13: 15	1,1375	2,275	3,4125	4,55	5,6875	6,825	7,9625	9,10	10,2375
14: 0	1,14	2,28	3,42	4,56	5,70	6,84	7,98	9,12	10,26
14: 5	1,1425	2,285	3,4275	4,57	5,7125	6,855	7,9975	9,14	10,2825
14: 10	1,145	2,29	3,435	4,58	5,725	6,87	8,015	9,16	10,305
14: 15	1,1475	2,295	3,4425	4,59	5,7375	6,885	8,0325	9,18	10,3275
15: 0	1,15	2,30	3,45	4,60	5,75	6,90	8,05	9,20	10,35
R	D	2D	3D	4D	5D	6D	7D	8D	9D

R	L	2L	3L	4L	5L	6L	7L	8L	9L
0: 5	,99751	1,99501	2,99252	3,99003	4,98753	5,98504	6,98254	7,98005	8,97756
0: 10	,99502	1,99005	2,98507	3,98010	4,97512	5,97015	6,96517	7,96020	8,95522
0: 15	,99256	1,98511	2,97767	3,97022	4,96278	5,95533	6,94789	7,94045	8,93300
1: 0	,99010	1,98020	2,97030	3,96040	4,95050	5,94059	6,93069	7,92079	8,91089
1: 5	,98765	1,97531	2,96296	3,95062	4,93827	5,92593	6,91358	7,90124	8,88889
1: 10	,98522	1,97044	2,95567	3,94089	4,92611	5,91133	6,89655	7,88177	8,86700
1: 15	,98280	1,96560	2,94840	3,93120	4,91401	5,89681	6,87961	7,86241	8,84521
2: 0	,98039	1,96078	2,94118	3,92157	4,90196	5,88235	6,86275	7,84314	8,82353
2: 5	,97800	1,95599	2,93399	3,91198	4,88998	5,86797	6,84597	7,82396	8,80196
2: 10	,97561	1,95122	2,92683	3,90244	4,87805	5,85366	6,82927	7,80488	8,78049
2: 15	,97324	1,94647	2,91971	3,89294	4,86618	5,83942	6,81265	7,78589	8,75912
3: 0	,97087	1,94175	2,91262	3,88350	4,85437	5,82524	6,79612	7,76699	8,73786
3: 5	,96852	1,93705	2,90557	3,87409	4,84262	5,81114	6,77966	7,74818	8,71671
3: 10	,96618	1,93237	2,89855	3,86473	4,83092	5,79710	6,76329	7,72947	8,69565
3: 15	,96386	1,92771	2,89157	3,85542	4,81928	5,78313	6,74699	7,71084	8,67470
4: 0	,96154	1,92308	2,88462	3,84615	4,80769	5,76923	6,73077	7,69231	8,65385
4: 5	,95923	1,91847	2,87770	3,83693	4,79616	5,75540	6,71463	7,67386	8,63309
4: 10	,95694	1,91388	2,87081	3,82775	4,78469	5,74163	6,69857	7,65550	8,61244
4: 15	,95465	1,90931	2,86396	3,81862	4,77327	5,72792	6,68258	7,63723	8,59189
5: 0	,95238	1,90476	2,85714	3,80952	4,76191	5,71429	6,66667	7,61905	8,57143
5: 5	,95012	1,90024	2,85036	3,80048	4,75059	5,70071	6,65083	7,60095	8,55107
5: 10	,94787	1,89573	2,84360	3,79147	4,73934	5,68720	6,63507	7,58294	8,53081
5: 15	,94563	1,89125	2,83688	3,78251	4,72813	5,67376	6,61939	7,56501	8,51064
6: 0	,94340	1,88679	2,83019	3,77359	4,71698	5,66038	6,60377	7,54717	8,49057
6: 5	,94118	1,88235	2,82353	3,76471	4,70588	5,64706	6,58824	7,52941	8,47059
6: 10	,93897	1,87793	2,81690	3,75587	4,69484	5,63380	6,57277	7,51174	8,45070
6: 15	,93677	1,87354	2,81030	3,74707	4,68384	5,62061	6,55738	7,49415	8,43091
7: 0	,93458	1,86916	2,80374	3,73832	4,67290	5,60748	6,54206	7,47664	8,41122
7: 5	,93240	1,86480	2,79720	3,72960	4,66200	5,59441	6,52681	7,45921	8,39161
7: 10	,93023	1,86047	2,79070	3,72093	4,65116	5,58140	6,51163	7,44186	8,37209
7: 15	,92807	1,85615	2,78422	3,71230	4,64037	5,56845	6,49652	7,42459	8,35267
8: 0	,92593	1,85185	2,77778	3,70370	4,62963	5,55556	6,48148	7,40741	8,33333
8: 5	,92379	1,84758	2,77136	3,69515	4,61894	5,54273	6,46652	7,39031	8,31409
8: 10	,92166	1,84332	2,76498	3,68664	4,60830	5,52995	6,45161	7,37327	8,29493
8: 15	,91954	1,83908	2,75862	3,67816	4,59770	5,51724	6,43678	7,35632	8,27586
9: 0	,91743	1,83486	2,75229	3,66972	4,58716	5,50459	6,42202	7,33945	8,25688
9: 5	,91533	1,83066	2,74600	3,66133	4,57666	5,49199	6,40732	7,32266	8,23799
9: 10	,91324	1,82648	2,73973	3,65297	4,56621	5,47945	6,39269	7,30594	8,21918
9: 15	,91116	1,82232	2,73349	3,64465	4,55581	5,46697	6,37813	7,28930	8,20046
10: 0	,90909	1,81818	2,72727	3,63636	4,54545	5,45454	6,36363	7,27272	8,18181
10: 5	,90703	1,81406	2,72108	3,62812	4,53515	5,44218	6,34921	7,25624	8,16327
10: 10	,90498	1,80996	2,71493	3,61991	4,52489	5,42987	6,33484	7,23982	8,14480
10: 15	,90293	1,80587	2,70880	3,61174	4,51467	5,41761	6,32054	7,22348	8,12641
11: 0	,90090	1,80180	2,70270	3,60360	4,50450	5,40540	6,30630	7,20720	8,10810
11: 5	,89888	1,79775	2,69663	3,59551	4,49438	5,39326	6,29214	7,19101	8,08989
11: 10	,89686	1,79372	2,69058	3,58744	4,48431	5,38117	6,27803	7,17489	8,07175
11: 15	,89485	1,78971	2,68456	3,57942	4,47427	5,36913	6,26398	7,15884	8,05369
12: 0	,89286	1,78571	2,67857	3,57143	4,46429	5,35714	6,25000	7,14286	8,03571
12: 5	,89088	1,78175	2,67263	3,56350	4,45438	5,34526	6,23613	7,12701	8,01788
12: 10	,88889	1,77778	2,66667	3,55556	4,44445	5,33333	6,22222	7,11111	8,00000
12: 15	,88692	1,77384	2,66075	3,54767	4,43459	5,32151	6,20843	7,09534	7,98226
13: 0	,88496	1,76991	2,65487	3,53982	4,42478	5,30974	6,19469	7,07965	7,96460
13: 5	,88300	1,76600	2,64901	3,53201	4,41501	5,29801	6,18102	7,06402	7,94702
13: 10	,88106	1,76211	2,64317	3,52423	4,40529	5,28634	6,16740	7,04846	7,92952
13: 15	,87912	1,75824	2,63736	3,51648	4,39560	5,27472	6,15384	7,03296	7,91208
14: 0	,87719	1,75439	2,63158	3,50877	4,38597	5,26316	6,14035	7,01754	7,89474
14: 5	,87527	1,75055	2,62582	3,50109	4,37637	5,25164	6,12692	7,00219	7,87746
14: 10	,87336	1,74673	2,62009	3,49345	4,36681	5,24018	6,11354	6,98690	7,86026
14: 15	,87146	1,74292	2,61438	3,48584	4,35730	5,22870	6,10022	6,97168	7,84314
15: 0	,86957	1,73913	2,60870	3,47826	4,34783	5,21739	6,08696	6,95652	7,82609
R	L	2L	3L	4L	5L	6L	7L	8L	9L

The Number R , in Col. 1, may signify, either,

1. The Rate of Exchange between *England* and *Ireland*, or between *England* and the *American Colonies*; that is, the Advance on 100 *l.* of *Irish* or Plantation Money to make it equal to 100 *l.* Sterling: In which Case D , in the other Columns, will be the Value of 1 *l.* Sterling in *Irish* or Plantation Money, and L , the Value of 1 *l.* *Irish* or *American* in *English* Money.

2. The Gain on 100 *l.* in buying or selling; and then D will be the selling Price of that Quantity of Goods, which cost 1 *l.*; and L , the prime Cost of that Quantity, which sells for 1 *l.*

3. The Advance of 100 *l.* Stock above Par: when D will be the Value in Money of 1 *l.* Stock; and L , the Quantity of Stock that can be purchased for 1 *l.*

EXAMPLE. I.

A Merchant in *London*, remits to his Factor in *Dublin* 736 *l.* Sterling; how much *Irish* Money will the Factor receive, when the Rate of Exchange is 12 *l.* 10 *s.* per Cent?

Or, What must Goods which cost 736 *l.* be sold for, if $12\frac{1}{2}$ per Cent. is to be gained by the Sale?

Or, What will 736 *l.* of South Sea Annuities cost at $12\frac{1}{2}$ per Cent. or when sold at 112 *l.* 10 *s.* for 100 *l.*?

$$\begin{array}{rcl}
 R = 12 \text{ l. } 10 \text{ s. gives } 1,125 = D \text{ (in Tab. 9.) and } 736 \times D \text{ will be} \\
 \text{Then} \quad \begin{array}{r} 787,5 \\ 33,75 \\ 6,75 \end{array} & \begin{array}{r} = 100 \times 7 D \\ = 10 \times 3 D \\ = 6 D \end{array} & \text{(the Answer.} \\
 \text{And the Sum} = \underline{828,00} & = & 736 D
 \end{array}$$

EXAMPLE. II.

A Merchant in *Dublin* remits to his Correspondent in *London* 828 *l.* *Irish*, when the Exchange was 12 *l.* 10 *s.* per Cent. How much will be received in *London*?

Or, In selling Goods for 828 *l.* the Gain was $12\frac{1}{2}$ per Cent. What was the prime Cost?

Or, How much South Sea Stock for 828 *l.* when it is sold at $112\frac{1}{2}$ per Cent?

$$\begin{array}{rcl}
 R = 12 \text{ l. } 10 \text{ s. gives } 0,88889 = L \text{ (in Tab. 10.) And } 828 \times L \text{ will be} \\
 \text{Then} \quad \begin{array}{r} 711,111 \\ 17,778 \\ 7,111 \end{array} & \begin{array}{r} = 100 \times 8 L \\ = 10 \times 2 L \\ = 8 L \end{array} & \text{(the Answer:} \\
 \text{And the Sum} \quad \underline{730,000} & = & 828 L
 \end{array}$$

T A B.

TABLE XI.

Values of Foreign Silver Coins.

	<i>Assay</i>	<i>wt.</i>	<i>Val.</i>
	<i>dwt.</i>	<i>dw gr</i>	<i>d</i>
The Piaſtre or Piece of 8 Reaus, now 10 Reaus,	<i>w.</i> 1	17 12	54
New Seville Piece of Eight,	1½	14	43.11
Mexico Piece of Eight,	1	17 10½	53.83
Pillar Piece of Eight,	<i>Stan.</i>	17 9	53.87
Peru Piece of Eight of uncertain Allay;	<i>w.</i> 1	17 12	54
Old Ecu of France of 60 Sols, <i>Turnois</i> ,	1½	19 14½	60.39
New Ecu of France 100 Sols, <i>2dw. w.</i> by Law,	2	11 4	34.31
Crufado of Portugal of 400 Reas, now 480 Reas,	<i>b.</i> 4½	20 22	66.15
Patacks or Patagons of 500 Reas, now 600 Reas,	<i>w.</i> 12	18 1	52.91
Ducaton of Flanders of 60 Sols, or Patars,	<i>b.</i> 3	20 21	65.59
Patagon or Crofs-Dollar of 48 Patars,	<i>w.</i> 14	18	52.28
Ducaton of Holland of 63 Styvers,	2	20 8	62.46
Patagon, Leg Dollar, or Rixdollar, of 50 Styvers,	2	6 18½	20.08
The three Guilder Piece, of 60 Styvers,	2	20 6	62.21
Guilder Florin, of 20 Styvers,	44	17 14	43.07
The 10 Shelling Piece of Zeland, of 60 Styvers,	<i>b.</i> 3	20 18	65.02
Lyon Dollar of Holland, of 42 Styvers,	<i>w.</i> 13	18 0	52.53
Ducatoon of Cologn,	12	17 22½	55.48
Rixdollar, or Patagon of Cologn,	6½	18 8	55.27
Rixdollar, or Patagon of Biſhop of Liege,	9	18 8	54.53
Rixdollar of Mentz,		18 5	
Rixdollar of Frankfort,	6	18 10	55.55
Rixdollar of Elect. Palatine, before 1620,	10	18 11	54.65
Rixdollar of Nuremburg,	8	18 12	55.03
Rixdollar of Lunemburg,	7	18 18	56.29
Rixdollar of Hanover,	<i>b.</i> 17½	8 10	28.14
Double Gulden of the Elect. Hanover,	17½	4 5	14.07
Double Gulden, or Piece, of two thirds,	<i>w.</i> 43	11 2	27.07
Half Gulden, or Piece, of one third,	40½	11 22	30.21
Gulden of Zell, or Piece, of 16 Gutz Groſh,	10	18 12	54.27
Gulden of Hildeſheim of 24 Manen Groſh, now 26,	44	11 14	28.67
Rixdollar of Madgburgh,	9	18 13	55.17
Gulden, or Guilder,	43	12 4	30.41
Old Rixdollar of Elect. Brandenburg,	43	11 3	27.81
Old Gulden of 24 Manen Groſh, now 26,	43	5 13	13.09
Gulden, or Piece, of two thirds,	41	11 3	28.12
Half Gulden, or Piece, of one third,	8	18 9	54.92
Gulden of Elect. Saxony, of two thirds,	8½	18 16	55.54
Old Bank Dollar of Hamburg,	21	11 13½	32.45
Old Rixdollar of Lubec,	<i>Stan</i>	20 0	62.00
The 4 Mark Piece of Denmark,	<i>w.</i> 58	13 12	30.92
The 8 Mark Piece of Sweden,		6 19	
The 4 Mark Piece of Sweden,	10½	18 9	54.27
The 2 Mark Piece of Sweden,	12	18 8½	53.85
Old Dollar of Dantzic,	10	18 9	54.04
Old Rixdollar of Thorn, near Dantzic,	10½	18 9	54.27
Rixdollars of Sigismund III. and Uladiſlaus IV. Kings	10½	18 9	54.27
of Poland,	10½	18 5	53.78
Rixdollar of the late Emperor Leopold,	7½	18 18½	56.24
Rixdollar of the late Emperor Ferdinand III.	13	18 1	52.65
Rixdollar of Ferdinand, Arch Duke of Austria,	23½	14 15	40.50
Rixdollar of Baſil,	23½	7 7½	20.25
Rixdollar of Zune,		18 2	
Old Ducat of Venice, ſtamp'd, <i>Ducatus Venetus</i> ,		9 1	
The Half Ducat,		20 6	
The New Ducat, ſtamp'd 124, of 6 l. 4 s. <i>de Picoli</i> ,			
The Half thereof,			
The Crufado Croiſat, or St Mark, ſtamp'd 140, of 7			
<i>Livres de Picoli</i> ,			
The Half and Quarter Crufado in Proportion,			

TABLE XI.

Values of Foreign Silver Coins.

	Assay	wt.	Val.
	dwt.	dw. gr.	d.
Another Coin of <i>Venice</i> ,	w. 46	17 10	42.08
The Piece of 2 Jules,	b. 6	3 15	11.05
Ducat de Banes of <i>Naples</i> , of 100 Grains,	w. 3	14 0 $\frac{1}{4}$	40.43
The Half Ducat,	3	7 0 $\frac{1}{8}$	20.21
The Tarin, or fifth part of a Ducat,	3	2 19 $\frac{1}{4}$	8.09
The Carlin or tenth part	3	1 9 $\frac{1}{2}$	4.04
Escudi Ecu, or Crown of <i>Rome</i> , of 10 Julios,		20 14 $\frac{1}{2}$	
Teston, of 3 Julios,	1	5 21 $\frac{1}{2}$	18.32
Ducat of <i>Florence</i> and <i>Leghorn</i> , of 10 $\frac{1}{2}$ Julios,	b. 8	20 3	64.62
Julios of <i>Rome</i> ,		2 5	
Piastre Ecu, or Crown of <i>Ferdinand II</i> , D. of <i>Tuscany</i> ,	w. 1	17 12	54.
Piastre Ecu, or Crown of <i>Cosmus III</i> .	1	16 18	51.69
Croisat of <i>Genoa</i> , of 7 $\frac{1}{2}$ Lires,	b. 7	24 15	78.74
Ecu d' Argent of 7 Lires. 12 Sols,			
Piastre Ecu, or Crown of <i>Milan</i> ,		17 21	
Philip of <i>Milan</i> , of 7 Lires,		20 20	
Livre of <i>Savoy</i> , of 20 Sols,		3 22	
The 10 Sols Piece,		1 23	
A Roupee	16 $\frac{1}{2}$	7 10	24.07
Gout Gulden, or Florin d'or, of 28 Styvers,	w. 75	12 19	26.26
Another,	48	11 0	26.72
Another,	48	12 0	29.15

T A B. XII. Gold Coins unworn.

	Ca. gr.	dw. gr.	s.	d.
Old Lewis d'Or, the $\frac{1}{2}$ & $\frac{1}{4}$ in Proportion,	w. 0 0 $\frac{1}{2}$	4 8	16:9.	3
New Lewis d'Or, the $\frac{1}{2}$ & $\frac{1}{4}$ in Proportion,	0 1 $\frac{1}{2}$	5 5 $\frac{2}{5}$	20:0.	6
Old <i>Spanish</i> double Doublon,	0 0 $\frac{1}{2}$	17 8	67:1.	4
Old <i>Spanish</i> double Pistole; $\frac{1}{2}$ in Proportion.	0 0 $\frac{1}{2}$	8 16	33:6.	7
New <i>Seville</i> double Pistole; $\frac{1}{2}$ & $\frac{1}{4}$ in Proportion,		8 16 $\frac{1}{3}$		
The double Moeda of <i>Portugal</i> , new coined,	0 0 $\frac{1}{4}$	6 22	26:10.	4
Ditto, as they come into <i>England</i> ,	0 0 $\frac{1}{4}$	6 21 $\frac{3}{4}$	26:9.	9
The Moeda,	0 0 $\frac{1}{4}$	3 11	13:5.	1
Half Moeda,	0 0 $\frac{1}{4}$	1 17 $\frac{1}{2}$	6:8.	5
<i>Hungary</i> Ducat,	b. 1. 2	2 5 $\frac{1}{2}$	9:3.	6
Ducats of <i>Holland</i> , and of Bishop of <i>Bamburgh</i> ,	1 2	2 5 $\frac{1}{2}$	9:3.	2
Double Ducat of the Duke of <i>Hanover</i> ,	1 2	4 10 $\frac{1}{2}$	18:4.	8
Ducat of the Duke of <i>Hanover</i> ,	1 2	2 5 $\frac{1}{4}$	9:2.	7
Ducats of <i>Brandenburg</i> , <i>Sweden</i> , and <i>Denmark</i> ,	1 2	2 5 $\frac{1}{2}$	9:3.	2
Ducat of <i>Poland</i> ,	1 2	2 5	9:2.	1
Ducat of <i>Transylvania</i> ,	1 1 $\frac{1}{2}$	2 4 $\frac{3}{4}$	8:11.	6
Sequin, Chequin, or Zacheen, of <i>Venice</i> ,	1 3 $\frac{1}{2}$	2 5 $\frac{3}{4}$	9:5.	7
Old <i>Italian</i> Pistole,	w. 0 0 $\frac{1}{4}$	4 6 $\frac{3}{4}$	16:7.	6
Double Pistole of Pope <i>Urban</i> , 1634,		8 14 $\frac{1}{2}$		
Half Pistole of <i>Innocent II</i> . 1685,		2 4		
Double Pistole of <i>Placentia</i> ,		8 10		
Double Pistole of <i>Genoa</i> , 1621,		8 16		
Double Pistole of <i>Milan</i> ,		8 13 $\frac{1}{2}$		
Single Pistole of <i>Milan</i> ,		4 6 $\frac{3}{4}$		
Single Pistole of <i>Savoy</i> ,		4 8 $\frac{1}{2}$		
Double Ducats of <i>Castile</i> , <i>Genoa</i> , <i>Portugal</i> , <i>Florence</i> ,				
<i>Hungary</i> , and <i>Venice</i> ,	b. 1 2 $\frac{1}{2}$	4 11	18:7.	7
Single Ducats of the same Places,	1 2 $\frac{1}{2}$	2 5 $\frac{1}{2}$	9:3.	8
Double Ducats of several Forms, in <i>Germany</i> ,	1 1	4 11	18:4.	
Single Ditto,	1 1	2 5 $\frac{1}{2}$	9:2.	
Double Ducat of <i>Genoa</i> ,	1 2	4 11	18:6.	5
Single Ducats of <i>Genoa</i> , <i>Besancon</i> , and <i>Zurich</i> ,	1 2	2 5 $\frac{1}{2}$	9:3.	2
Pistoles of <i>Rome</i> , <i>Milan</i> , <i>Venice</i> , <i>Florence</i> , <i>Savoy</i> , <i>Genoa</i> ,				
<i>Orange</i> , <i>Trevon</i> , <i>Besancon</i> ,	w. 0 0 $\frac{1}{4}$	4 6	16:6.	7
Ducat of <i>Barbary</i> , with <i>Arabic</i> Letters,	2 1 $\frac{1}{2}$	2 16 $\frac{1}{4}$	9:3.	5

<i>Money.</i>		<i>Long Measure.</i>	
Farthings		Barley Corns	
4 = 1 Penny		3 = 1 Inch	
48 = 12 = 1 Shilling		36 = 12 = 1 Foot	
960 = 240 = 20 = 1 Pound.		108 = 36 = 3 = 1 Yard	
		594 = 198 = 16½ = 5½ = 1 Pole	
		23760 = 7920 = 660 = 220 = 40 = 1 Furl.	
		190080 = 63360 = 5280 = 1760 = 320 = 8 = 1 Mi.	
<i>Troy Weight.</i>		<i>Land Measure.</i>	
Grains		Links	
24 = 1 Pennyweight		625 = 1 Pole	
480 = 20 = 1 Ounce		25000 = 40 = 1 Rood	
5760 = 240 = 12 = 1 Pound.		100000 = 160 = 4 = 1 Acre	
		64000000 = 102400 = 2560 = 640 = 1 Mile	
<i>Superficial Measure.</i>		<i>Time.</i>	
Inches		Seconds	
144 = 1 Foot		60 = 1 Minute	
1296 = 9 = 1 Yard.		3600 = 60 = 1 Hour	
		86400 = 1440 = 24 = 1 Day	
		31556937 = 525949 = 8766 = 365¼ = 1 Year.	
<i>Solid Measure.</i>		<i>Apothecaries Weight.</i>	
Inches		Grains	
1728 = 1 Foot		20 = 1 Scruple, mark'd ℞	
46656 = 27 = 1 Yard.		60 = 3 = 1 Dram, 3	
		480 = 24 = 8 = 1 Ounce, 3	
		5760 = 288 = 96 = 12 = 1 Pound.	
<i>Avoirdupois Weight.</i>		<i>Beer Measure.</i>	
Drams		Sol. Inch.	
16 = 1 Ounce		282 = 8 Pints = 1 Gallon	
256 = 16 = 1 Pound		2538 = 72 = 9 = 1 Firkin	
28672 = 1792 = 112 = 1 Hundred		5076 = 144 = 18 = 2 = 1 Kilderk.	
573440 = 35840 = 2240 = 20 = 1 Ton.		10152 = 288 = 36 = 4 = 2 = 1 Barr.	
<i>Wine Measure.</i>		<i>Ale Measure.</i>	
Solid Inches		Sol. Inch.	
231 = 8 Pints = 1 Gallon		282 = 8 Pints = 1 Gallon	
14553 = 504 = 63 = 1 Hogshead		2256 = 64 = 8 = 1 Firkin	
29106 = 1008 = 126 = 2 = 1 Pipe		4512 = 128 = 16 = 2 = 1 Kilderkin	
58212 = 2016 = 252 = 4 = 2 = 1 Tun.		9224 = 256 = 32 = 4 = 2 = 1 Barrel.	
<i>Dry Measure.</i>		<i>Monetary.</i>	
Pints		5 Shillings = 1 Crown	
8 = 1 Gallon		10 Ditto, = 1 Angel	
16 = 2 = 1 Peck		6 s. 8 d. = 1 Noble	
64 = 8 = 4 = 1 Bushel		13 s. 4 d. = 1 Mark	
512 = 64 = 32 = 8 = 1 Quarter.			
4 Nails = 1 Quarter of a Yard			
4 Quarters = 1 Yard			
5 Quarters = 1 <i>English</i> Ell			
3 Quarters = 1 <i>Flemish</i> Ell			
6 Quarters = 1 <i>French</i> Ell			
1 lb. <i>Avoird.</i> = 7000 <i>Troy</i> Grains.			
1 oz. Ditto = 437½ Ditto			
As 4 : 5 :: lb. <i>Troy</i> : lb. <i>Avoird.</i>	} nearly		
As 80 : 73 :: oz. <i>Troy</i> : oz. <i>Avoird.</i>			
As 9 : 11 :: Win. Gal. : Beer Gal.			
		Land is best measured by a Chain of 4 Poles long, divided into 100 Parts, called Links.	
		Note, 4840 square Yards is an Acre.	
		A Firkin of Soap or Herrings is equal to a Firkin of Ale.	

Values of Foreign Weights and Measures.

<i>Measures of Length.</i>	<i>Eng. Inch</i>	<i>Gold and Silver Weights.</i>	<i>English Troy. Gra.</i>
<i>Paris Foot</i> —————	12.785	<i>Roman Ounce</i> —————	438
<i>Venetian Foot</i> —————	13.944	<i>Roman Pound of 12 Oz.</i> ———	5256
<i>Rhinland Foot</i> —————	12.396	<i>Spanish Ounce</i> —————	443 $\frac{1}{2}$
<i>Strasburgh Foot</i> —————	11.424	<i>Spanish Pound of 16 Oz.</i> ———	7090
<i>Nuremburgh Foot</i> —————	12.	<i>Venetian Ounce</i> —————	460 $\frac{2}{3}$
<i>Dantzic Foot</i> —————	11.328	<i>Venetian Pound of 12 Oz.</i> ———	5528
<i>Danish Foot</i> —————	12.504	<i>Neapolitan Ounce</i> —————	412 $\frac{1}{2}$
<i>Swedish Foot</i> —————	11.733	<i>Neapolitan Pound of 12 Oz.</i> ———	4950
<i>Derah, or Cubit of Cairo</i> ———	21.888	<i>Florence, Pisa and Leghorn Oz.</i>	440 $\frac{1}{2}$
<i>Persian Arish</i> —————	38.364	<i>Ditto Pound of 12 Oz.</i> ———	5286
<i>Greater } Turkish Pike {</i>	26.4	<i>Sienna Ounce</i> —————	431 $\frac{1}{2}$
<i>Lesser } Turkish Pike {</i>	25.572	<i>Sienna Pound of 12 Oz.</i> ———	5178
<i>Braccio at Florence</i> ———	22.956	<i>Genoa Ounce</i> —————	405 $\frac{1}{2}$
<i>Braccio for Woolen at Sienna</i>	14.904	<i>Dutch Ounce</i> —————	570
<i>Ditto Linnen</i> —————	23.688	<i>Turkish Okey of 400 Silver</i>	
<i>Canna at Naples</i> —————	82.56	<i>Drachms</i> —————	19128
<i>Vera at Almaria and</i>		<i>Turkish Silver Drachm</i> ———	47 $\frac{4}{5}$
<i>Gibraltar</i> —————	33.12	<i>Persian and Mogul Ditto</i> ———	47 $\frac{4}{5}$
<i>Palmo di Archetti at Rome</i>	8.784	<i>Turkish Sultani</i>	
<i>Canna di Archetti</i> ———	87.84	<i>Egyptian Sherif</i>	
<i>Palmo di Braccio di Mer-</i>		<i>Venet. and Barbara Chequeen</i>	53 $\frac{1}{2}$
<i>cantia</i> —————	8.346	<i>Nuremburgh Ducat</i>	
<i>Genoa Palm</i> —————	9.78	<i>Cairo Ratel of 144 Drachms</i>	6886 $\frac{2}{5}$
<i>Bolognian Foot</i> —————	15.0	<i>Damascus Ratel of 720 Drachms</i>	34430 $\frac{2}{5}$
<i>Antwerp Ell</i> —————	27.396	<i>Strasburgh Ounce</i> —————	454 $\frac{3}{4}$
<i>Amsterdam Ell</i> —————	27.216	<i>Strasburgh Pound of 16 Oz.</i>	7276
<i>Leyden Ell</i> —————	27.12	<i>Nuremburgh Ounce</i> —————	491
<i>Paris Drapers Ell</i> —————	47.148	<i>Nuremburgh Pound of 16 Oz.</i>	7870
<i>Paris Mercers Ell</i> —————	47.244	<i>Paris Medicinal lb. of 12 Oz.</i>	5670
		<i>German Medicinal Oz.</i> ———	460 $\frac{2}{3}$
<i>Liquid Measures.</i>	<i>Eng. Wi. Measure.</i>	<i>Carat for weighing Diamonds</i>	151,3
<i>Paris Chopine</i> —————	1. Pint	<i>French Pound of 2 Marcs</i> ———	7560
<i>Paris Pint</i> —————	2.	<i>French Marc of 8 Oz.</i> —————	3780
<i>Paris Sextier</i> —————	16.	<i>French Ounce of 8 Grosse</i> ———	472 $\frac{1}{2}$
<i>Paris Muid</i> —————	576.	<i>French Grosse of 3 Deniers</i> ———	59 $\frac{1}{16}$
<i>Strasburgh Schoppen</i>	0.8171	<i>French Denier of 24 Grains</i>	19 $\frac{11}{16}$
<i>Strasburgh Pint</i> ———	1.6342	<i>French Grain</i> —————	0. $\frac{105}{128}$
<i>Strasburgh Maßen</i> ———	3.2684	<i>Cologne Marc of 8 Oz.</i> ———	3611
<i>Strasburgh Ohman</i> ———	98.0520	<i>Cologne Ounce of 8 Drachms</i> ———	451 $\frac{7}{8}$
<i>Strasburgh Fuder</i> ———	2353.25	<i>Cologne Drachm of 76 Es</i> ———	56 $\frac{2}{3}$
		<i>Cologne Es</i> —————	0. $\frac{3}{4}$

1. 97	T	2T	3T	4T	5T	6T	7T	8T	9T	gr. b
1	,001042	,002083	,003125	,004167	,005208	,006250	,007292	,008333	,009375	.1
2	,002083	,004167	,006250	,008333	,010417	,012500	,014583	,016667	,018750	1.
3	,003125	,006250	,009375	,012500	,015625	,018750	,021875	,025000	,028125	1.1
1.	,004167	,008333	,012500	,016667	,020833	,025000	,029167	,033333	,037500	2.
1.1	,005208	,010417	,015625	,020833	,026042	,031250	,036458	,041667	,046875	2.1
1.2	,006250	,012500	,018750	,025000	,031250	,037500	,043750	,050000	,056250	3.
1.3	,007292	,014583	,021875	,029167	,036458	,043750	,051042	,058333	,065625	3.1
2.	,008333	,016667	,025000	,033323	,041667	,050000	,058333	,066667	,075000	4.
2.1	,009375	,018750	,028125	,037500	,046875	,056250	,065625	,075000	,084375	4.1
2.2	,010417	,020833	,031250	,041667	,052083	,062500	,072917	,083333	,093750	5.
2.3	,011458	,022917	,034375	,045833	,057292	,068750	,080208	,091667	,103125	5.1
3.	,012500	,025000	,037500	,050000	,062500	,075000	,087500	,100000	,112500	6.
3.1	,013542	,027083	,040625	,054167	,067708	,081250	,094792	,108333	,121875	6.1
3.2	,014583	,029167	,043750	,058333	,072917	,087500	,102083	,116667	,131250	7.
3.3	,015625	,031250	,046875	,062500	,078125	,093750	,109375	,125000	,140625	7.1
4.	,016667	,033333	,050000	,066667	,083333	,100000	,116667	,133333	,150000	8.
4.1	,017708	,035417	,053125	,070833	,088542	,106250	,123958	,141667	,159375	8.1
4.2	,018750	,037500	,056250	,075000	,093750	,112500	,131250	,150000	,168750	9.
4.3	,019792	,039583	,059375	,079167	,098958	,118750	,138542	,158333	,178125	9.1
5.	,020833	,041667	,062500	,083333	,104167	,125000	,145833	,166667	,187500	10
5.1	,021875	,043750	,065625	,087500	,109375	,131250	,153125	,175000	,196875	10.1
5.2	,022917	,045833	,068750	,091667	,114583	,137500	,160417	,183333	,206250	11.
5.3	,023958	,047917	,071875	,095833	,119792	,143750	,167708	,191667	,215625	11.1
6.	,025000	,050000	,075000	,100000	,125000	,150000	,175000	,200000	,225000	12.
6.1	,026042	,052083	,078125	,104167	,130208	,156250	,182292	,208333	,234375	12.1
6.2	,027083	,054167	,081250	,108333	,135417	,162500	,189583	,216667	,243750	13.
6.3	,028125	,056250	,084375	,112500	,140625	,168750	,196875	,225000	,253125	13.1
7.	,029167	,058333	,087500	,116667	,145833	,175000	,204167	,233333	,262500	14.
7.1	,030208	,060417	,090625	,120833	,151042	,181250	,211458	,241667	,271875	14.1
7.2	,031250	,062500	,093750	,125000	,156250	,187500	,218750	,250000	,281250	15.
7.3	,032292	,064583	,096875	,129167	,161458	,193750	,226042	,258333	,290625	15.1
8.	,033333	,066667	,100000	,133333	,166667	,200000	,233333	,266667	,300000	16.
8.1	,034375	,068750	,103125	,137500	,171875	,206250	,240625	,275000	,309375	16.1
8.2	,035417	,070833	,106250	,141667	,177083	,212500	,247917	,283333	,318750	17.
8.3	,036458	,072917	,109375	,145833	,182292	,218750	,255208	,291667	,328125	17.1
9.	,037500	,075000	,112500	,150000	,187500	,225000	,262500	,300000	,337500	18.
9.1	,038542	,077083	,115625	,154167	,192708	,231250	,269792	,308333	,346875	18.1
9.2	,039583	,079167	,118750	,158333	,197917	,237500	,277083	,316667	,356250	19.
9.3	,040625	,081250	,121875	,162500	,203125	,243750	,284375	,325000	,365625	19.1
10.	,041667	,083333	,125000	,166667	,208333	,250000	,291667	,333333	,375000	20.
10.1	,042708	,085417	,128125	,170833	,213542	,256250	,298958	,341667	,384375	20.1
10.2	,043750	,087500	,131250	,175000	,218750	,262500	,306250	,350000	,393750	21.
10.3	,044792	,089583	,134375	,179167	,223958	,268750	,313542	,358333	,403125	21.1
11.	,045833	,091667	,137500	,183333	,229167	,275000	,320833	,366667	,412500	22.
11.1	,046875	,093750	,140625	,187500	,234375	,281250	,328125	,375000	,421875	22.1
11.2	,047917	,095833	,143750	,191667	,239583	,287500	,335417	,383333	,431250	23.
11.3	,048958	,097917	,146875	,195833	,244792	,293750	,342708	,391667	,440625	23.1
12.	,050000	,100000	,150000	,200000	,250000	,300000	,350000	,400000	,450000	24.
1. 98	T	2T	3T	4T	5T	6T	7T	8T	9T	gr. b

d. qu	T	2T	3T	4T	5T	6T	7T	8T	9T	gr. b
1	,051042	,102083	,153125	,204167	,255208	,306250	,357292	,408333	,459375	.1
2	,052083	,104167	,156250	,208333	,260417	,312500	,364583	,416667	,468750	1.
3	,053125	,106250	,159375	,212500	,265625	,318750	,371875	,425000	,478125	1.1
1.	,054167	,108333	,162500	,216667	,270833	,325000	,379167	,433333	,487500	2.
1.1	,055208	,110417	,165625	,220833	,276042	,331250	,386458	,441667	,496875	2.1
1.2	,056250	,112500	,168750	,225000	,281250	,337500	,393750	,450000	,506250	3.
1.3	,057292	,114583	,171875	,229167	,286458	,343750	,401042	,458333	,515625	3.1
2.	,058333	,116667	,175000	,233333	,291667	,350000	,408333	,466667	,525000	4.
2.1	,059375	,118750	,178125	,237500	,296875	,356250	,415625	,475000	,534375	4.1
2.2	,060417	,120833	,181250	,241667	,302083	,362500	,422917	,483333	,543750	5.
2.3	,061458	,122917	,184375	,245833	,307292	,368750	,430208	,491667	,553125	5.1
3.	,062500	,125000	,187500	,250000	,312500	,375000	,437500	,500000	,562500	6.
3.1	,063542	,127083	,190625	,254167	,317708	,381250	,444792	,508333	,571875	6.1
3.2	,064583	,129167	,193750	,258333	,322917	,387500	,452083	,516667	,581250	7.
3.3	,065625	,131250	,196875	,262500	,328125	,393750	,459375	,525000	,590625	7.1
4.	,066667	,133333	,200000	,266667	,333333	,400000	,466667	,533333	,600000	8.
4.1	,067708	,135417	,203125	,270833	,338542	,406250	,473958	,541667	,609375	8.1
4.2	,068750	,137500	,206250	,275000	,343750	,412500	,481250	,550000	,618750	9.
4.3	,069792	,139583	,209375	,279167	,348958	,418750	,488542	,558333	,628125	9.1
5.	,070833	,141667	,212500	,283333	,354167	,425000	,495833	,566667	,637500	10.
5.1	,071875	,143750	,215625	,287500	,359375	,431250	,503125	,575000	,646875	10.1
5.2	,072917	,145833	,218750	,291667	,364583	,437500	,510417	,583333	,656250	11.
5.3	,073958	,147917	,221875	,295833	,369792	,443750	,517708	,591667	,665625	11.1
6.	,075000	,150000	,225000	,300000	,375000	,450000	,525000	,600000	,675000	12.
6.1	,076042	,152083	,228125	,304167	,380208	,456250	,532292	,608333	,684375	12.1
6.2	,077083	,154167	,231250	,308333	,385417	,462500	,539583	,616667	,693750	13.
6.3	,078125	,156250	,234375	,312500	,390625	,468750	,546875	,625000	,703125	13.1
7.	,079167	,158333	,237500	,316667	,395833	,475000	,554167	,633333	,712500	14.
7.1	,080208	,160417	,240625	,320833	,401042	,481250	,561458	,641667	,721875	14.1
7.2	,081250	,162500	,243750	,325000	,406250	,487500	,568750	,650000	,731250	15.
7.3	,082292	,164583	,246875	,329167	,411458	,493750	,576042	,658333	,740625	15.1
8.	,083333	,166667	,250000	,333333	,416667	,500000	,583333	,666667	,750000	16.
8.1	,084375	,168750	,253125	,337500	,421875	,506250	,590625	,675000	,759375	16.1
8.2	,085417	,170833	,256250	,341667	,427083	,512500	,597917	,683333	,768750	17.
8.3	,086458	,172917	,259375	,345833	,432292	,518750	,605208	,691667	,778125	17.1
9.	,087500	,175000	,262500	,350000	,437500	,525000	,612500	,700000	,787500	18.
9.1	,088542	,177083	,265625	,354167	,442708	,531250	,619792	,708333	,796875	18.1
9.2	,089583	,179167	,268750	,358333	,447917	,537500	,627083	,716667	,806250	19.
9.3	,090625	,181250	,271875	,362500	,453125	,543750	,634375	,725000	,815625	19.1
10.	,091667	,183333	,275000	,366667	,458333	,550000	,641667	,733333	,825000	20.
10.1	,092708	,185417	,278125	,370833	,463542	,556250	,648958	,741667	,834375	20.1
10.2	,093750	,187500	,281250	,375000	,468750	,562500	,656250	,750000	,843750	21.
10.3	,094792	,189583	,284375	,379167	,473958	,568750	,663542	,758333	,853125	21.1
11.	,095833	,191667	,287500	,383333	,479167	,575000	,670833	,766667	,862500	22.
11.1	,096875	,193750	,290625	,387500	,484735	,581250	,678125	,775000	,871875	22.1
11.2	,097917	,195833	,293750	,391667	,489583	,587500	,685417	,783333	,881250	23.
11.3	,098958	,197917	,296875	,395833	,494792	,593750	,692708	,791667	,890625	23.1
d. qu	T	2T	3T	4T	5T	6T	7T	8T	9T	gr. b

The *Tables of Decimal Values*, page 29, give a Number (*D*) equivalent to the Parts of the Weights and Measures therein specified ;

For E X A M P L E.

If it be required to find the Decimal equal to 7 oz. 17 dw. 15 gr. considered as the Parts of a Pound Troy.

In the Tables, for 7 oz.	<i>D</i> , is ,5833
16 dw. 16 gr.	<i>D</i> , is ,0694
20 gr.	<i>D</i> , is ,0035
3 gr.	<i>D</i> , is ,0005

For their Sum 7 oz. 17 dw. 15 gr. *D*, is ,6567

Use of the Table for finding the Value of Merchandize.

- I. *To find the Decimal Value of a Pound Sterling equal to any Shillings, Pence, and Farthings. Or,*
To find the Decimal Value of an Ounce Troy equal to any Pennyweights, Grains, and half Grains.

C A S E I.

If the Number of Shillings or Pennyweights be even,
 The Pence and Farthings, or Grains and half Grains, give *T* in page 30.

C A S E II.

If the Number of Shillings or Pennyweights be odd,
 The Pence and Farthings, or Grains and half Grains, give *T* in page 31.

Instead of the initial 0 in *T*, write half the given Number of Shillings or Pennyweights, and then the required Decimal will be obtained.

E X A M P L E I.

Required the Decimal equal to 16s. $6\frac{3}{4}$ d. ?

(Page 30.) $6\frac{3}{4}$ d. gives ,028125 = *T*; and half 16 s. is 8 :
 Therefore ,828125 is the Decimal required.

E X A M P L E II.

Required the Decimal equal to 17 s. $6\frac{3}{4}$ d. ?

(Page 31.) $6\frac{3}{4}$ d. give ,078125 = *T*; and half 17 s. is 8 :
 Therefore ,878125 is the Decimal required.

- II. *A Decimal being given, to find it's Value in Parts of a Pound Sterling, or an Ounce Troy.*

Call the Double of the left-hand Figure Shillings or Pennyweights; write 0 instead thereof, and call it *T*: then *T* gives the Pence and Farthings, or Grains and half Grains. But if *T* be found in pag. 31. add 1 to the Shillings or Pennyweights.

E X A M P L E

EXAMPLE I.

What is the Value of ,828125 l. ?

The Double of 8 is 16 s. (T =) 028125 gives $6\frac{3}{4}$ d :
Therefore 16 s. $6\frac{3}{4}$ d. is the Value required.

EXAMPLE II.

What is the Value of ,878125 l. ?

The Double of 8 is 16 s. (T =) 078125 give $6\frac{3}{4}$ d. in pag. 31.
Therefore 17 s. $6\frac{3}{4}$ d. is the Value required.

III. To find the Value, in Money, of any Quantity of Merchandise (Q), at any given Price.

1. Express (by Tab. 15, or 16.) the Parts of Q (if any) decimally.
2. Multiply Q by the Pounds of the Price.
3. Multiply one tenth of Q by half the Shillings of the Price:
4. If the Shillings of the Price be $\left\{ \begin{smallmatrix} \text{even} \\ \text{odd} \end{smallmatrix} \right\}$, the Pence and Farthings of the Price will give T, 2T, 3T, &c. in Page $\left\{ \begin{smallmatrix} 30 \\ 31 \end{smallmatrix} \right\}$.
5. Find by the Table the Product of Q multiplied by T.
6. The Sum of the three Products will be the Value required.

EXAMPLE.

What will 539 oz. 11 dw. 18 gr. of Gold cost at 3 l. 12 s. $2\frac{3}{4}$ d. per oz. ?

1. Q decimally ~~decimally~~ express'd is 539,5875 by Art. I. of this

2. Th. $Q \times 3$ l. is 1618,7625

3. And $\frac{1}{10} Q \times 6 (= \frac{12}{2} s.)$ is 323,7525

4. $2\frac{3}{4}$ d. give T = ,011458

5. $Q \times T$ is per Table

$\left. \begin{array}{l} 5,7292 = 100 \times 5 T \\ ,3438 = 10 \times 3 T \\ ,1031 = 9 T \\ ,0057 = \frac{1}{10} \times 5 T \\ ,0009 = \frac{1}{100} \times 9 T \end{array} \right\}$

6. The Sum of which = 1948,6977 = (per Art. II.)
1948 l. 13 s. $11\frac{1}{2}$ d. is the Value required.

N.	1	3	7	9	N.	1	3	7	9	N.	1	3	7	9	N.	1	3	7	9
60				3	60		3		3	120		3	17	3	180		3	13	3
61	13				61	13				121	7			23	181		7	23	17
62	3	7	3	17	62	3	7	3	17	122	3		3		182	3		3	31
63		3	7	3	63		3	7	3	123		3		3	183		3	11	3
64				11	64				11	124	17	11	29		184	7	19		43
65	3		3		65	3		3		125	3	7	3		185	3	17	3	11
66		3	23	3	66		3	23	3	126	13	3	7	3	186		3		3
67	11			7	67	11			7	127	31	19			187				
68	3		3	13	68	3		3	13	128	3		3		188	3	7	3	
69		3	17	3	69		3	17	3	129		3		3	189	31	3	7	3
70		19	7		70		19	7		130				7	190		11		23
71	3	23	3		71	3	23	3		131	3	13	3		191	3		3	19
72	7	3		3	72	7	3		3	132		3		3	192	17	3	41	3
73	17		11		73	17		11		133	11	31	7	13	193			13	7
74	3		3	7	74	3		3	7	134	3	17	3	19	194	3	29	3	
75		3		3	75		3		3	135	7	3	23	3	195		3	19	3
76		7	13		76		7	13		136		29		37	196	37	13	7	11
77	3		3	19	77	3		3	19	137	3		3	7	197	3		3	
78	11	3		3	78	11	3		3	138		3	19	3	198	7	3		3
79	7	13		17	79	7	13		17	139	13	7	11		199	11			
80	3	11	3		80	3	11	3		140	3	23	3		200	3		3	7
81		3	19	3	81		3	19	3	141	17	3	13	3	201		3		3
82					82					142	7				202	43	7		
83	3	7	3		83	3	7	3		143	3		3		203	3	19	3	
84	29	3	7	3	84	29	3	7	3	144	11	3		3	204	13	3	23	3
85	23				85	23				145			31		205	7		11	29
86	3		3	11	86	3		3	11	146	3	7	3	13	206	3		3	
87	13	3		3	87	13	3		3	147		3	7	3	207	19	3	31	3
88				7	88				7	148					208				
89	3	19	3	29	89	3	19	3	29	149	3		3		209	3	7	3	
90	17	3		3	90	17	3		3	150	19	3	11	3	210	11	3	7	3
91		11	7		91		11	7		151		17	37	7	211			29	13
92	3	13	3		92	3	13	3		152	3		3	11	212	3	11	3	
93	7	3		3	93	7	3		3	153		3	29	3	213		3		3
94		23		13	94		23		13	154	23		7		214			19	7
95	3		3	7	95	3		3	7	155	3		3		215	3		3	17
96	31	3		3	96	31	3		3	156	7	3		3	216		3	11	3
97		7		11	97		7		11	157		11	19		217	13	41	7	
98	3		3	23	98	3		3	23	158	3		3	7	218	3	37	3	11
99		3		3	99		3		3	159	37	3		3	219	7	3	13	3
100	7	17	19		100	7	17	19		160		7			220	31			47
101	3		3		101	3		3		161	3		3		221	3		3	7
102		3	13	3	102		3	13	3	162		3		3	222		3	17	3
103			17		103			17		163	7	23		11	223	23	7		
104	3	7	3		104	3	7	3		164	3	31	3	17	224	3		3	13
105		3		3	105		3		3	165	13	3		3	225		3	37	3
106			11		106			11		166	11				226	7	31		
107	3	29	3	13	107	3	29	3	13	167	3	7	3	23	227	3		3	43
108	23	3		3	108	23	3		3	168	41	3	7	3	228		3		3
109				7	109				7	169	19				229	29			11
110	3		3		110	3		3		170	3	3	3		230	3	7	3	
111	11	3		3	111	11	3		3	171	29	3	17	3	231		3	7	3
112	19		7		112	19		7		172			11	7	232	11	23	13	17
113	3	11	3	17	113	3	11	3	17	173	3		3	37	233	3		3	
114	7	3	31	3	114	7	3	31	3	174		3		3	234		3		3
115			13	19	115			13	19	175	17		7		235		13		7
116	3		3	7	116	3		3	7	176	3	41	3	29	236	3	17		23
117		2	11	3	117		2	11	3	177	7	3		3	237		3		3
118		7		29	118		7		29	178	13				238				
119	3		3	11	119	3		3	11	179	3	11	3	7	239	3		3	
N.	1	3	7	9	N.	1	3	7	9	N.	1	3	7	9	N.	1	3	7	9

Prime Divisors.

35

N.	1	3	7	9	N.	1	3	7	9	N.	1	3	7	9	N.	1	3	7	9
240	7	3	29	3	300		3	31	3	360	13	3		3	420		3	7	3
241		19		41	301		23	7		361	23			7	421		11		
242	3		3	7	302	3		3	13	362	3		3	19	422	3	41	3	
243	11	3		3	303	7	3		3	363		3		3	423		3	19	3
244		7		31	304		17	11		364	11		7	41	424			31	7
245	3	11	3		305	3	43	3	7	365	3	13	3		425	3		3	
246	23	3		3	306		3		3	366	7	3	19	3	426		3	17	3
247	7			37	307	37	7	17		367				13	427			7	11
248	3	13	3	19	308	3		3		368	3	29	3	7	428	3		3	
249	47	3	11	3	309	11	3	19	3	369		3		3	429	7	3		3
250	41		23	13	310	7	29	13		370		7	11		430	11	13	59	31
251	3	7	3	11	311	3	11	3		371	3	47	3		431	3	19	3	7
252		3	7	3	312		3	53	3	372	61	3		3	432	29	3		3
253		17	43		313	31	13		43	373	7		37		433	61	7		
254	3		3		314	3	7	3	47	374	3	19	3	23	434	3	43	3	
255		3		3	315	23	3	7	3	375	11	3	13	3	435	19	3		3
256	13	11	17	7	316	29				376		53			436	7		11	17
257	3	31	3		317	3	19	3	11	377	3	7	3		437	3		3	29
258	29	3	13	3	318		3		3	378	19	3	7	3	438	13	3	41	3
259			7	23	319		31	23	7	379	17			29	439		23		53
260	3	19	3		320	3		3		380	3		3	13	440	3	7	3	
261	7	3		3	321	13	3		3	381	37	3	11	3	441	1	3	7	3
262		43	37	11	322		11	7		382			43	7	442			19	43
263	3		3	7	323	3	53	3	41	383	3		3	11	443	3	11	3	23
264	19	3		3	324	7	3	17	3	384	23	3		3	444		3		3
265	11	7			325					385			7	17	445		61		7
266	3		3	17	326	3	13	3	7	386	3		3	53	446	3		3	41
267		3		3	327		3	29	3	387	7	3		3	447	17	3	11	3
268	7				328	17	7	19	11	388		11	13		448			7	37
269	3		3		329	3	37	3		389	3	17	3	7	449	3		3	11
270	37	3		3	330		3		3	390	47	3		3	450	7	3		3
271			11		331	7		31		391		7			451	13			
272	3	7	3		332	3		3		392	3		3		452	3		3	7
273		3	7	3	333		3	47	3	393		3	31	3	453	23	3	13	3
274		13	41		334	13			17	394	7			11	454	19	7		
275	3		3	31	335	3	7	3		395	3	59	3	37	455	3	29	3	47
276	11	3		3	336		3	7	3	396	17	3		3	456		3		3
277	17	47		7	337			11	31	397	11	29	41	23	457	7	17	23	19
278	3	11	3		338	3	17	3		398	3	7	3		458	3		3	13
279		3		3	339		3	43	3	399	13	3	7	3	459		3		3
280			7	53	340	19	41		7	400				19	460	43		17	11
281	3	29	3		341	3		3	13	401	3		3		461	3	7	3	31
282	7	3	11	3	342	11	3	23	3	402		3		3	462		3	7	3
283	19			17	343	47		7	19	403	29	37	11	7	463	11	41		
284	3		3	7	344	3	11	3		404	3	13	3		464	3		3	
285		3		3	345	7	3		3	405		3		3	465		3		3
286		7	47	19	346					406	31	17	7	13	466	59		13	7
287	3	13	3		347	3	23	3	7	407	3		3		467	3		3	
288	43	3		3	348	59	3	11	3	408	7	3	61	3	468	31	3	43	3
289	7	11		13	349		7	13		409			17		469		13	7	37
290	3		3		350	3	31	3	11	410	3	11	3	7	470	3		3	17
291	41	3		3	351		3		3	411		3	23	3	471	7	3	53	3
292	23	37		29	352	7	13			412	13	7			472			29	
293	3	7	3		353	3		3		413	3		3		473	3		3	7
294	17	3	7	3	354		3		3	414	41	3	11	3	474	11	3	47	3
295	13			11	355	53	11			415	7				475		7	67	
296	3		3		356	3	7	3	43	416	3	23	3	11	476	3	11	3	19
297		3	13	3	357		3	7	3	417	43	3		3	477	13	3	17	3
298	11	19	29	7	358			17	37	418	37	47	53	59	478	7			
299	3	41	3		359	3		3	59	419	3	7	3	13	479	3		3	
N.	1	3	7	9	N.	1	3	7	9	N.	1	3	7	9	N.	1	3	7	9

N.	1	3	7	9
480		3	11	3
481	17			61
482	3	7	3	11
483		3	7	3
484	47	29	37	13
485	3	23	3	43
486		3	31	3
487		11		7
488	3	19	3	
489	67	3	59	3
490	13		7	
491	3	17	3	
492	7	3	13	3
493				11
494	3		3	7
495		3		3
496	11	7		
497	3		3	13
498	17	3		3
499	7		19	
500	3		3	
501		3	29	3
502			11	47
503	3	7	3	
504	71	3	7	3
505		31	13	
506	3	6	3	37
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508		13		7
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510		3		3
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512	3	47	3	23
513	7	3	11	3
514	53	37		19
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516	13	3		3
517		7	31	
518	3	71	3	
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520	7	11	41	
521	3	13	3	17
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523				13
524	3	7	3	29
525	59	3	7	3
526		19	23	11
527	3		3	
528		3	17	3
529	11	67		7
530	3		3	
531	47	3	13	3
532	17		7	73
533	3		3	19
534	7	3		3
535		53	11	23
536	3	31	3	7
537	41	3	19	3
538		7		17
539	3		3	
N.	1	3	7	9

N.	1	3	7	9
540	11	3		3
541	7			
542	3	11	3	61
543		3		3
544			13	
545	3	7	3	53
546	43	3	7	3
547		13		
548	3		3	11
549	17	3	23	3
550				7
551	3	37	3	
552		3		3
553		11	7	29
554	3	23	3	31
555	7	3		3
556	67		19	
557	3		3	7
558		3	37	3
559		7	29	11
560	3	13	3	71
561	31	3	41	3
562	7		17	13
563	3	43	3	
564		3		3
565				
566	3	7	3	
567	53	3	7	3
568	13		11	
569	3		3	41
570		3	13	3
571		2		7
572	3	59	3	17
573	11	3		3
574			7	
575	3	11	3	13
576	7	3	73	3
577	29	23	53	
578	3		3	7
579		3	11	3
580		7		37
581	3		3	11
582		3		3
583	7	19	13	
584	3		3	
585		3		3
586		11		
587	3	7	3	
588		3	7	3
589	43	71		17
590	3		3	19
591	23	3	61	3
592	31			7
593	3	17	3	
594	13	3	19	3
595	11		7	59
596	3	67	3	4
597	7	3	43	3
598		31		53
599	3	13	3	7
N.	1	3	7	9

N.	1	3	7	9
600	17	3		3
601		7	11	13
602	3	19	3	
603	37	3		3
604	7			23
605	3		3	73
606	11	3		3
607	13		59	
608	3	7	3	
609		3	7	3
610		17	31	41
611	3		3	29
612		3	11	3
613			17	7
614	3		3	11
615		3	47	3
616	61		7	31
617	3		3	37
618	7	3	23	3
619	41	11		
620	3		3	7
621		3		3
622		7	13	
623	3	23	3	17
624	9	3		3
625	7	13		11
626	3		3	
627		3		3
628	11	61		19
629	3	7	3	
630		3	7	3
631		59		71
632	3		3	
633	13	3		3
634	17		11	7
635	3		3	
636		3		3
637	23		7	
638	3	13	3	
639	7	3		3
640	37	19	43	13
641	3	11	3	7
642		3		3
643	59	7	41	47
644	3	17	3	
645		3	11	3
646	7	23	29	
647	3		3	11
648		3	13	3
649		43	73	67
650	3	7	3	23
651	17	3	7	3
652		11	61	
653	3	47	3	13
654	31	3		3
655			79	7
656	3		3	
657		3		3
658	29	7	11	
659	3	19	3	
N.	1	3	7	9

N.	1	3	7	9
660	7	3		3
661	11	17	13	
662	3	37	3	7
663	19	3		3
664	29	7	17	61
665	3		3	
666		3	59	3
667	7		11	
668	3	41	3	
669		3	37	3
670			19	
671	3	7	3	
672	11	3	7	3
673	53			23
674	3	11	3	17
675	43	3	29	3
676			67	7
677	3	13	3	
678		3	11	3
679			7	13
680	3		3	11
681	7	3	17	3
682	9			
683	3		3	7
684		3	41	3
685	13	7		19
686	3		3	
687		3	13	3
688	7		71	83
689	3	61	3	
690	67	3		3
691		31		11
692	3	7	3	13
693	29	3	7	3
694	11	53		
695	3	17	3	
696		3		3
697		19		7
698	3		3	29
699		3		3
700		47	7	43
701	3		3	
702	7	3		3
703	79	13	31	
704	3		3	7
705	11	3		3
706	23	7	37	
707	3	11	3	
708	73	3	19	3
709	7	41	47	31
710	3		3	
711	13	3	11	3
712		17		
713	3	7	3	11
714	37	3	7	3
715		23	17	
716	3	13	3	67
717	71	3		3
718	43	11		7
719	3		3	23
N.	1	3	7	9

N.	1	3	7	9
720	19	3		3
721			7	
722	3	31	3	
723	7	3		3
724	13			11
725	3		3	7
726	53	3	13	3
727	11	7	19	29
728	3		3	37
729	23	3		3
730	7	67		
731	3	71	3	13
732		3	17	3
733			11	41
734	3	7	3	
735		3	7	3
736	17	37	53	
737	3	73	3	47
738	11	3	83	3
739	19		13	7
740	3	11	3	31
741		3		3
742	41	13	7	17
743	3		3	43
744	7	3	11	3
745		29		
746	3	17	3	7
747	31	3		3
748		7		
749	3	59	3	
750	13	3		3
751	7	11		73
752	3		3	
753	17	3		3
754		19		
755	3	7	3	
756		3	7	3
757	67			11
758	3		3	
759		3	71	3
760	11			7
761	3	23	3	19
762		3	29	3
763	13	17	7	
764	3		3	
765	7	3	13	3
766	47	79	11	
767	3		3	7
768		3		3
769		7	43	
770	3		3	13
771	11	3		3
772	7			59
773	3	11	3	71
774		3	61	3
775	2			
776		7	3	17
777	19	3	7	3
778	31	13	13	
779			3	11
N.	1	3	7	9

N.	1	3	7	9
780	29	3	37	3
781	73	13		7
782	3		3	
783	41	3	17	3
784		11	7	47
785	3		3	29
786	7	3		3
787	17			
788	3		3	7
789	13	3	53	3
790		7		11
791	3	41	3	
792	89	3		3
793	7			17
794	3	13	3	
795		3	73	3
796	19		31	13
797	3	7	3	79
798	23	3	7	3
799	61		11	19
800	3	53	3	
801		3		3
802	13	71	23	7
803	3	29	3	
804	11	3	13	3
805	83		7	
806	3	11	3	
807	7	3	41	3
808		59		
809	3		3	7
810		3	11	3
811		7		23
812	3		3	11
813	47	3	79	3
814	7	17		29
815	3	31	3	41
816		3		3
817		11	13	
818	3	7	3	19
819		3	7	3
820	59	13	29	
821	3	43	3	
822		3	19	3
823				7
824	3		3	73
825	37	3	23	3
826	11		7	
827	3		3	17
828	7	3		3
829				43
830	3	19	3	7
831		3		3
832	53	7	11	
833	3	13	3	31
834	19	3	7	3
835	7		61	13
836	3		3	
837	11	3		3
838	17	8		
839	3		3	37
N.	1	3	7	9

N.	1	3	7	9
840	31	3	7	3
841	13	47	19	
842	3		3	
843		3	11	3
844	23			7
845	3	79	3	11
846		3		3
847	43	37	7	61
848	3	17	3	13
849	7	3	29	3
850		11	47	67
851	3		3	7
852		3		3
853	19	7		
854	3		3	83
855	17	3	43	3
856	7		13	11
857	3		3	23
858		3	31	3
859	11	13		
860	3	7	3	
861	79	3	7	3
862	37			
863	3	89	3	53
864		3		3
865	41	17	11	7
866	3		3	
867	13	3		3
868		19	7	
869	3		3	
870	7	3		3
871	31		23	
872	3	11	3	7
873		3		3
874		7		13
875	3		3	19
876		3	11	3
877	7	31	67	
878	3		3	11
879	59	3	19	3
880	13			23
881	3	7	3	
882		3	7	3
883		11		
884	3	37	3	
885	53	3	17	3
886				7
887	3	19	3	13
888	83	3		3
889	17		7	11
890	3	29	3	59
891	7	3	37	3
892	11		79	
893	3		3	7
894		3	43	3
895		7	13	17
896	3		3	
897		3	47	3
898	7	13	11	89
899	3	17	3	
N.	1	3	7	9

N.	1	3	7	9
900		3		3
901			71	29
902	3	7	3	
903	11	3	7	3
904			83	
905	3	11	3	
906	13	3		3
907	47	43	29	7
908	3	31	3	61
909		3	11	3
910	19		7	
911	3	13	3	11
912	7	3		3
913	23			13
914	3	41	3	7
915		3		3
916		7	89	53
917	3		3	67
918		3		3
919	7	29	17	
920	3		3	
921	61	3	13	3
922		23		11
923	3	7	3	
924		3	7	3
925	11	19		47
926	3	59	3	13
927	73	3		3
928			37	7
929	3		3	17
930	71	3	41	3
931		67	7	
932	3		3	19
933	7	3		3
934			13	
935	3	47	3	7
936	11	3	17	3
937		7		83
938	3	11	3	41
939		3		3
940	7		23	97
941	3		3	
942		3	11	3
943				
944	3	7	3	11
945	13	3	7	3
946				17
947	3		3	
948	19	3	53	3
949		11		7
950	3	13	3	37
951		3	31	3
952		89	7	13
953	3		3	
954	7	3		3
955		41	19	11
956	3	73	3	7
957	17	3	61	
958	11	7		43
959	3	53	3	29
N.	1	3	7	9

N.	1	3	7	9	N.	1	3	7	9	N.	1	3	7	9	N.	1	3	7	9
960		3	12	3	970	89	31	17	7	980	3		3	17	990		3		3
961	7		59		971	3	11	3		981		3		3	991	11	23	47	7
962	3		3		972		3	71	3	982	7	11	31		992	3		3	
963		3	23	3	973	37		7		983	3		3		993		3	19	3
964	31		11		974	3		3		984	13	3	43	3	994		61	7	
965	3	7	3	13	975	7	3	11	3	985		59			995	3	37	3	23
966		3	7	3	976	43	13			986	3	7	3	71	996	7	3		3
967	19	17			977	3	29	3	7	987		3	7	3	997	13		11	17
968	3	23	3		978		3		3	988	41			11	998	3	67	3	7
969	11	3		3	979		7	97	41	989	3	13	3	19	999	97	3	13	3

T A B. XVIII. A List of Prime Numbers.

10 Thousand.										11 Thousand.										12 Thous.				
Hundred.										Hundred.										Hundred.				
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
07	03	11	01	27	01	01	09	31	03	03	13	13	11	11	03	17	01	01	03	07	01	03	01	01
09	11	23	03	29	13	07	11	37	09	27	17	39	17	23	19	21	17	07	09	11	07	11	23	09
37	33	43	13	33	29	13	23	47	37	47	19	43	21	37	27	33	19	13	23	37	09	27	29	13
39	39	47	21	53	31	27	29	53	39	57	31	51	29	43	49	57	31	21	27	41	13	39	43	21
61	41	53	31	57	59	31	33	59	49	59	49	57	51	47	51	77	43	27	33	43	19	41	47	33
67	51	59	33	59	67	39	39	61	57	69	59	61	53	67	79	81	77	31	39	49	43	51	73	37
69	59	67	37	63	89	51	53	67	73	71	61	73	69	71	87	89	79	33	41	71	49	53	77	51
79	63	71	43	77	97	57	71	83	79	83	71	79	83	83	93	99	83	39	53	73	57	63	79	57
91	69	73	57	87		63	81	89	87	87	73	87	93	89	97		89	63	59	97	61	69	91	73
93	77	89	69	99		67	89	91	93	93	77	99	99	91				67	69		63	77		79
99	81		91			87	99				97							87	71		97	81		87
	93		99			91												97	81			89		91

12 Thous.					13 Thousand.										14 Thousand.												
Hundred.	5	6	7	8	9	Hundred.	0	1	2	3	4	5	6	7	8	9	Hundred.	0	1	2	3	4	5	6	7	8	9
	03	01	03	09	07		01	03	17	09	11	13	13	09	07	01		09	07	07	03	01	03	21	13	13	23
	11	11	13	21	11		03	09	19	13	17	23	19	11	29	03		11	43	21	21	07	19	27	17	21	29
	17	13	21	23	17		07	21	29	27	21	37	27	21	31	07		29	49	43	23	11	33	29	23	27	39
	27	19	39	29	19		09	27	41	31	41	53	33	23	41	13		33	53	49	27	19	37	33	31	31	47
	39	37	43	41	23		33	47	49	37	51	67	49	29	59	21		51	59	51	41	23	43	39	37	43	51
	41	41	57	53	41		37	51	59	39	57	77	69	51	73	31		57	73	81	47	31	49	53	41	51	57
	47	47	63	89	53		43	59	67	67	63	91	79	57	77	33		71	77	93	6	37	51	57	47	67	69
	53	53	81	93	59		49	63	91	81	69	97	81	59	79	63		81	97		87	47	57	69	53	69	83
	69	59	91	99	67		63	71	97	97	77		87	63	83	67		83			89	49	61	83	59	79	
	77	71	99		73		93	77		99	87		91	81		97						61	63	99	67	87	
	83	89			79		99	83			99		93	89		99						79	91		71	91	
	89	97			83			87					97	99								89	93		83		97

PROBLEM.

To find all the Prime Divisors of any Number within the Limits of the Table.

I. If the given Number be even, 2 will be one of it's Prime Divisors.

II. If the Digit 5 possesses the Right Hand place of any Number, 5 is one of it's Prime Divisors.

III. If the Unit's Place of any Number less than 10000 be 1, 3, 7, or 9; the Three left Hand Figures of that Number in the Column mark'd N (Tab. 17) and the Unit's place at top of one of the other Columns, will give the least prime Divisor thereof, except Unity.

IV. If no Divisor be thus found (that is, if the place where the Divisor should be, is Vacant) the Number with which the Table was entered is a Prime.

V. Having found, by any of the preceeding Directions, a Prime Divisor of the given Number, divide thereby, and seek the least Prime Divisor of the Quotient, by which divide as before; proceed in the same manner untill the Quotient arising is a Prime Number; then the Divisors so found, together with the Quotient last obtained, will be all the prime Divisors of the given Number.

EXAMPLE.

Required, the Prime Divisors of 30030?

By Art. 1; 2, is one of it's Divisors; and $\frac{30030}{2} = 15015$.

By Art. 2; 5, is one of the Divisors of 15015, & $\frac{15015}{5} = 3003$.

By Art. 3; in page 35; 300 under N, & 3 at Top, give 3;
& $\frac{3003}{3} = 1001$.

————; in page 34; 100 under N, & 1 at Top, give 7;
& $\frac{1001}{7} = 143$.

————; in page 34; 14 under N, & 3 at Top give 11;
& $\frac{143}{11} = 13$.

By Art. 4; 13 is a Prime Number.

Therefore 1, 2, 5, 3, 7, 11 & 13, are all the prime Divisors of 30030.

Tab. 18. contains all the Prime Numbers between 10000 and 15000.

Thus 10007, 10009, 10037, &c. 10103, 10111, 10133, &c.
11003, 11027, 11047, &c. are Prime Numbers.

N.	Sq. Root.	Cube Root.	N.	Sq. Root.	Cube Root.	N.	Sq. Root.	Cube Root.
1	1,000000	1,000000	61	7,810250	3,936497	121	11,000000	4,946088
2	1,414214	1,259921	62	7,874008	3,957892	122	11,04536	4,959675
3	1,732051	1,412250	63	7,937254	3,979057	123	11,09054	4,973190
4	2,000000	1,587401	64	8,000000	4,000000	124	11,13553	4,986631
5	2,236068	1,709976	65	8,062258	4,020726	125	11,18034	5,000000
6	2,449490	1,817121	66	8,124038	4,041240	126	11,22497	5,013298
7	2,645751	1,912933	67	8,185353	4,061548	127	11,26943	5,026526
8	2,828427	2,000000	68	8,246211	4,081656	128	11,31371	5,039684
9	3,000000	2,080084	69	8,306624	4,101566	129	11,35782	5,052774
10	3,162278	2,154435	70	8,366600	4,121285	130	11,40175	5,065797
11	3,316625	2,223980	71	8,426150	4,140818	131	11,44552	5,078753
12	3,464102	2,289428	72	8,485281	4,160168	132	11,48912	5,091643
13	3,605551	2,351335	73	8,544004	4,179339	133	11,53256	5,104469
14	3,741657	2,410142	74	8,602325	4,198336	134	11,57584	5,117230
15	3,872983	2,466212	75	8,660254	4,217163	135	11,61895	5,129928
16	4,000000	2,519842	76	8,717798	4,235824	136	11,66190	5,142563
17	4,123106	2,571282	77	8,774964	4,254321	137	11,70470	5,155137
18	4,242641	2,620741	78	8,831761	4,272659	138	11,74734	5,167649
19	4,358899	2,668402	79	8,888194	4,290841	139	11,78983	5,180101
20	4,472136	2,714418	80	8,944272	4,308870	140	11,83216	5,192494
21	4,582576	2,758923	81	9,000000	4,326749	141	11,87434	5,204828
22	4,690416	2,802039	82	9,055385	4,344481	142	11,91638	5,217103
23	4,795832	2,843867	83	9,110434	4,362071	143	11,95826	5,229321
24	4,898979	2,884499	84	9,165151	4,379519	144	12,00000	5,241482
25	5,000000	2,924018	85	9,219544	4,396830	145	12,04159	5,253588
26	5,099020	2,962496	86	9,273618	4,414005	146	12,08306	5,265637
27	5,196152	3,000000	87	9,327379	4,431047	147	12,12436	5,277632
28	5,291503	3,036589	88	9,380832	4,447960	148	12,16553	5,289572
29	5,385165	3,072317	89	9,433981	4,464745	149	12,20656	5,301459
30	5,477226	3,107232	90	9,486833	4,481405	150	12,24745	5,313293
31	5,567764	3,141381	91	9,539392	4,497942	151	12,28821	5,325074
32	5,656854	3,174802	92	9,591663	4,514357	152	12,32883	5,336803
33	5,744563	3,207534	93	9,643651	4,530655	153	12,36932	5,348481
34	5,830952	3,239612	94	9,695360	4,546836	154	12,40967	5,360108
35	5,916080	3,271066	95	9,746794	4,562903	155	12,44990	5,371685
36	6,000000	3,301927	96	9,797959	4,578857	156	12,49000	5,383213
37	6,082763	3,332222	97	9,848858	4,594701	157	12,52996	5,394690
38	6,164414	3,361975	98	9,899495	4,610436	158	12,56981	5,406120
39	6,244998	3,391211	99	9,949874	4,626065	159	12,60952	5,417501
40	6,324555	3,419952	100	10,000000	4,641589	160	12,64911	5,428835
41	6,403124	3,448217	101	10,04988	4,657010	161	12,68858	5,440122
42	6,480741	3,476027	102	10,09950	4,672330	162	12,72792	5,451362
43	6,557439	3,503398	103	10,14889	4,687548	163	12,76715	5,462556
44	6,633250	3,530348	104	10,19804	4,702669	164	12,80625	5,473703
45	6,708204	3,556893	105	10,24695	4,717694	165	12,84523	5,484806
46	6,782330	3,583048	106	10,29563	4,732624	166	12,88410	5,495865
47	6,855655	3,608826	107	10,34408	4,747459	167	12,92285	5,506879
48	6,928203	3,634241	108	10,39230	4,762203	168	12,96148	5,517848
49	7,000000	3,659306	109	10,44031	4,776856	169	13,00000	5,528775
50	7,071068	3,684031	110	10,48809	4,791420	170	13,03840	5,539658
51	7,141428	3,708430	111	10,53565	4,805896	171	13,07670	5,550499
52	7,211103	3,732511	112	10,58301	4,820284	172	13,11488	5,561298
53	7,280110	3,756286	113	10,63015	4,834588	173	13,15295	5,572054
54	7,348469	3,779763	114	10,67708	4,848808	174	13,19091	5,582770
55	7,416198	3,802953	115	10,72381	4,862944	175	13,22876	5,593445
56	7,483315	3,825862	116	10,77033	4,876999	176	13,26650	5,604079
57	7,549834	3,848501	117	10,81665	4,890973	177	13,30413	5,614673
58	7,615773	3,870877	118	10,86278	4,904868	178	13,34166	5,625226
59	7,681146	3,892996	119	10,90871	4,918685	179	13,37909	5,635741
60	7,745967	3,914867	120	10,95445	4,932424	180	13,41641	5,646216
N.	Sq. Root.	Cube Root.	N.	Sq. Root.	Cube Root.	N.	Sq. Root.	Cube Root.

The Use of Table XX.

An horizontal Rank of Numbers, is an arithmetical Series, whose Order is denominated by a Number (m) against it in the side Column.

A perpendicular Rank of Numbers, are the Unciae of the Powers of a Binomial, whose Index is expressed by a Number (n) in the upper Line.

And the Combinations of (m) Things in (n) are shewn by the Number common to both Ranks.

Thus, the Combinations of 5 Things in 20 are 15504.

The Use of Table XXI.

The Numbers of the second Column are those Powers of the Number 2, whose Indices are expressed by a Number (m) against them in the first Column; and are also the Elections in (m) Things.

The Numbers of the third Column are the Elections of a Number of Things greater than 1 in (m) Things.

The Use of Table XXII.

An horizontal Rank of Numbers are Powers of a Digit (m) against it in the side Column.

A perpendicular Rank of Numbers are those Powers of the nine Digits whose Index is expressed by a Number (n) in the upper Line.

And the n th Power of m is the Number common to both Ranks.

Thus, the 16th Power of 3 is 43046721.

The Use of Table XXIII.

The Numbers of the middle Column are the Permutations of any Number of Things (m) placed against them in the side Column; and are also the Continual Product of all the Numbers in the side Column.

Thus, $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 = 40320$.

TABLE XX.

	27	28	29	30	31	32	33	34
0	1	1	1	1	1	1	1	1
1	27	28	29	30	31	32	33	34
2	351	378	406	435	465	496	528	561
3	2925	3276	3654	4060	4495	4960	5456	5984
4	17550	20475	23751	27405	31465	35960	40920	46376
5	80730	98280	118755	142506	169911	201376	237336	278256
6	296010	376740	475020	593775	736281	906192	1107568	1344904
7	888030	1184040	1560780	2035800	2629575	3365856	4272048	5379616
8	2220075	3108105	4292145	5852925	7888725	10518300	13884156	18156204
9	4686825	6906900	10015005	14307150	20160075	28048800	38567100	52451256
10	8436285	13123110	20030010	30045015	44352165	64512240	92561040	131128140
11	13037895	21474180	34597290	54627300	84672315	129024480	193536720	286097760
12	17383860	30421755	51895935	86493225	141120525	225792840	354817320	548354040
13	20058300	37442160	67863915	119759850	206253075	347373600	573166440	927983760
14	20058300	40116600	77558760	145422675	265182525	471435600	818809200	1391975640
15	17383860	37442160	77558760	155117520	300540195	565722720	1037158320	1855967520
16	13037895	30421755	67863915	145422675	300540195	601080390	1166803110	2203961430
17	8436285	21474180	51895935	119759850	265182525	565722720	1166803110	2333606220
18	4686825	13123110	34597290	86493225	206253075	471435600	1037158320	2203961430
19	2220075	6906900	20030010	54627300	141120525	347373600	818809200	1855967520
20	888030	3108105	10015005	30045015	84672315	225792840	573166440	1391975640
21	296010	1184040	4292145	14307150	44352165	129024480	354817320	927983760
22	80730	376740	1560780	5852925	20160075	64512240	193536720	548354040
23	17550	98280	475020	2035800	7888725	28048800	92561040	286097760
24	2925	20475	118755	593775	2629575	10518300	38567100	131128140
25	351	3276	23751	142506	736281	3365856	13884156	52451256
26	27	378	3654	27405	169911	906192	4272048	18156204
27	1	28	406	4060	31465	201376	1107568	5379616
28		1	29	435	4495	35960	237336	1344904
29			1	30	465	4960	40920	278256

TABLE XXI. Elections.

	Powers of 2	Of No. > 1
0	1	0
1	2	0
2	4	1
3	8	4
4	16	11
5	32	26
6	64	57
7	128	120
8	256	247
9	512	502
10	1024	1013
11	2048	2036
12	4096	4083
13	8192	8178
14	16384	16369
15	32768	32752
16	65536	65519
17	131072	131054
18	262144	262125
19	524288	524268
20	1048576	1048555
21	2097152	2097130
22	4194304	4194281
23	8388608	8388584
24	16777216	16777191
25	33554432	33554406
26	67108864	67108837
27	134217728	134217700
28	268435456	268435427
29	536870912	536870882

4

F 2

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T A B. XXII. Powers of the 9 Digits.

1	2	3	4	5	6	7	8	9	10
1	1	1	1	1	1	1	1	1	1
2	4	8	16	32	64	128	256	512	1024
3	9	27	81	243	729	2187	6561	19683	59049
4	16	64	256	1024	4096	16384	65536	262144	1048576
5	25	125	625	3125	15625	78125	390625	1953125	9765625
6	36	216	1296	7776	46656	279936	1679616	10077696	60466176
7	49	343	2401	16807	117649	823543	5764801	40353607	282475249
8	64	512	4096	32768	262144	2097152	16777216	134217728	1073741824
9	81	729	6561	59049	531441	4782969	43046721	387420489	3486784401
11		12		13		14			
1	1	1	1	1	1	1	1	1	1
2		2048		4096		8192		16384	
3		177147		531441		1594323		4782969	
4		4194304		16777216		67108864		268435456	
5		48828125		244140625		1220703125		6103515625	
6		362797056		2176782336		13060694016		78364164096	
7		1977326743		13841287201		96889010407		678223072849	
8		8589934592		68719476736		549755813888		4398046511104	
9		31381059609		282429536481		2541865828329		22876792454961	
15		16		17					
1	1	1	1	1	1	1	1	1	1
2		32768		65536		131072		129140163	
3		14348907		43046721		129140163		17179869184	
4		1073741824		4294967296		17179869184		762939453125	
5		30517578125		152587890625		762939453125		16926659444736	
6		470184984576		2821109907456		16926659444736		232630513987207	
7		4747561509943		33232930569601		232630513987207		2251799813685248	
8		35184372088832		281474976710656		2251799813685248		16677181699666569	
9		205891132094649		1853020188851841		16677181699666569			
18		19		20					
1	1	1	1	1	1	1	1	1	1
2		262144		524288		1048576		3486784401	
3		387420489		1162261467		3486784401		1099511627776	
4		68719476736		274877906944		1099511627776		95367431640625	
5		3814697265625		19073486328125		95367431640625		3656158440062976	
6		101559956668416		609359740010496		3656158440062976		79792266297612001	
7		1628413597910449		11398895185373143		79792266297612001		1152921504606846976	
8		18014398509481984		144115188075855872		1152921504606846976		12157665459056928801	
9		150094635296999121		1350851717672992089		12157665459056928801			

T A B L E XXIII. Permutations.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	2	3	4	5	6	7	8	9	10	11	12	13</																	

Fine Gold, ———	19,640	C	English Pebble, —	2,696	L	Spirit of Urine, —	1,120	C
Stand. Gold struck into Money ———	19,520	L	Jasper, ———	2,666	M	Isinglass, ———	1,111	M
Ditto only cast, —	18,888	L	Maidstone Rubble, —	2,666	L	Frankincense, —	1,071	M
Quicksilver, ———	14,000	C	Morr Stone, ———	2,656	L	Dry Mahogany, —	1,063	L
Fine Mercury, ———	13,943	L	Rock Chrystal, —	2,650	N	Human Blood, —	1,054	C
Quicksilver of Bra- zil, ———	13,593	M	Hyacinth, ———	2,631	M	Amber, ———	1,040	N
Coarse Mercury, —	13,512	L	Flint Stone, ———	2,621	L	Gall, ———	1,034	M
Hardest Lead, ———	11,356	L	Common green Glass, ———	2,620	C	Vinegar of Beer, —	1,034	M
Common Lead, ———	11,325	C	Purbeck Stone, —	2,601	L	Canary Wine, ———	1,033	M
German Lead, ———	11,310	M	Vulgar Glass, ———	2,580	N	Brazil Wood, ———	1,031	M
Cast Lead, ———	11,260	L	Portland Stone, —	2,570	L	Serum of human Blood, ———	1,030	C
Fine Silver, ———	11,091	C	Parian Marble, —	2,560	L	Milk, ———	1,030	C
Stand. Silver struck into Money, ———	10,629	L	Flint Stone, ———	2,542	M	Urine, ———	1,030	C
Ditto cast, ———	10,535	C	Onix, ———	2,510	M	Dry Box, ———	1,030	C
Bismuth, ———	9,700	C	Turquoise, ———	2,508	M	Sea Water, ———	1,030	C
Fine Copper, ———	9,000	L	Common Stone, —	2,500	C	Vinegar of Wine, —	1,011	M
Copper in Half- pence, ———	8,915	L	Irish Slate, ———	2,490	M	Spring Water, ———	1,000	
Swedish Copper, —	8,784	M	White Portland for Carving, ———	2,312	L	Camphire, ———	0,996	N
Common Copper, —	8,478	L	Glauber's Salts, —	2,246	M	Distill'd Water, —	0,993	M
Cast Brass, ———	8,208	L	Fresh Sheeps Bones, —	2,222	M	Bees Wax, ———	0,955	C
Steel, ———	7,850	C	Heddington Stone, —	2,204	L	Burgundy Wine, —	0,953	M
Spanish Bar Iron, —	7,827	L	Sal Gem, ———	2,143	N	Linseed Oil, ———	0,932	N
Swedish ditto, ———	7,818	L	Oyster Shells, ———	2,092	M	Dry Oak, ———	0,925	C
Elastic Steel, ———	7,809	M	Hatton Stone, ———	2,056	L	Logwood, ———	0,913	M
Steel neald soft, —	7,792	L	Sulphur Vive, ———	2,000	M	Oil Olive, ———	0,913	N
Hardned Steel, ———	7,738	M	Brick, ———	2,000	C	Dry English Oak, —	0,905	L
Iron, ———	7,645	C	Cremor Tartari, —	1,900	M	Spirit of Turpen- tine, ———	0,874	N
British Pewter, ———	7,471	M	Nitre, ———	1,900	C	Rectified Spirit of Wine, ———	0,866	N
Tin, ———	7,320	C	British Vitriol, —	1,880	M	Beech, ———	0,854	M
Native Cinnabar, —	7,300	M	Hartshorn, ———	1,875	M	Mastic, ———	0,849	M
Block or grain Tin, —	7,156	L	Alabaster, ———	1,875	C	Dry Elm, ———	0,800	L
Cast Iron, ———	7,135	L	Oxhorn, ———	1,840	M	Dry Ash, ———	0,800	C
Softest cast Iron, or Dutch Plates, ———	6,960	L	Dry Ivory, ———	1,825	C	Peruvian Bark, —	0,784	M
Glass of Antimony, —	5,280	N	Brimstone, ———	1,800	C	Yew, ———	0,760	M
Loadstone, ———	5,106	M	Dantzic Vitriol, —	1,715	N	Dry Maple, ———	0,755	C
Lapis Calaminaris, —	5,000	M	Allum, ———	1,714	N	Dry Wainscott, —	0,747	L
Hungarian Antimo- ny, ———	4,700	M	Borax, ———	1,714	N	Plumbtree, ———	0,663	M
Tutty, ———	4,615	M	Barrel Clay, ———	1,712	L	Dry yellow Firr, —	0,657	L
Marcasite, ———	4,589	M	Calculus humanus	1,700	C	Cedar, ———	0,613	M
Bohemian Granate, —	4,360	M	Oyl of Vitriol, —	1,700	N	Dry Elm, ———	0,600	C
A Pseudo Topaz, —	4,270	N	Ox Bones dry, ———	1,656	M	Dry white Deal, —	0,569	L
Crude Antimony, —	4,000	M	Oyl of Tartar, —	1,550	C	Juniper, ———	0,556	M
Swedish Granate, —	3,978	M	Bezoar, ———	1,500	C	Firr, ———	0,550	C
Blue Slate, ———	3,500	M	Sal Armoniac, ———	1,453	M	Sassafras, ———	0,482	M
A Diamond, ———	3,400	N	Honey, ———	1,450	C	Cork, ———	0,240	C
Chrystal Glass, ———	3,150	C	Gum Arabic, ———	1,375	N	Air, ———	0,001	N
Plate Glass, ———	2,942	L	Opium, ———	1,363	M			
Venetian Talc, ———	2,780	M	Coco Shell, ———	1,340	M			
Bole Armenic, ———	2,727	M	Lignum Vitae, —	1,327	M			
Island Chrystal, —	2,720	N	Spirit of Nitre, —	1,315	C			
Veined Marble, ———	2,704	L	Aqua Fortis, ———	1,300	C			
	2,700	C	Newcastle Coals, —	1,270	L			
			Myrrh, ———	1,250	M			
			Pit Coal, ———	1,240	M			
			Aqua Regia, ———	1,234	M			
			Aloe Wood, ———	1,177	M			
			Pitch, ———	1,150	C			
			Spirit of Salt, ———	1,130	C			
			Craffamentum of human Blood, —	1,126	C			

An English Cube
Foot of Spring
Water weigh
62½ Pounds A-
voirdupoise.

46 T A B. XXV. The Lengths of circular Arcs.

D.	Arc.	°	Arc.	°	Arc.	°	Arc.	°	Arc.	°	A.
1	,0174533	61	1,0646508	121	2,1118483	1	2909	1	48	1	1
2	,0349066	62	1,0821041	122	2,1293016	2	5818	2	97	2	2
3	,0523599	63	1,0995574	123	2,1467549	3	8727	3	145	3	2
4	,0698132	64	1,1170107	124	2,1642082	4	11636	4	194	4	3
5	,0872665	65	1,1344640	125	2,1816615	5	14544	5	242	5	4
6	,1047198	66	1,1519173	126	2,1991148	6	17453	6	291	6	5
7	,1221730	67	1,1693706	127	2,2165681	7	20362	7	339	7	6
8	,1396263	68	1,1868239	128	2,2340214	8	23271	8	388	8	6
9	,1570796	69	1,2042772	129	2,2514747	9	26180	9	436	9	7
10	,1745329	70	1,2217305	130	2,2689280	10	29089	10	485	10	8
11	,1919862	71	1,2391838	131	2,2863813	11	31998	11	533	11	9
12	,2094395	72	1,2566371	132	2,3038346	12	34907	12	582	12	10
13	,2268928	73	1,2740904	133	2,3212879	13	37815	13	630	13	11
14	,2443461	74	1,2915436	134	2,3387412	14	40724	14	679	14	11
15	,2617994	75	1,3089969	135	2,3561945	15	43633	15	727	15	12
16	,2792527	76	1,3264502	136	2,3736478	16	46542	16	776	16	13
17	,2967060	77	1,3439035	137	2,3911010	17	49451	17	824	17	14
18	,3141593	78	1,3613568	138	2,4085543	18	52360	18	873	18	15
19	,3316126	79	1,3788101	139	2,4260076	19	55269	19	921	19	15
20	,3490659	80	1,3962634	140	2,4434609	20	58178	20	970	20	16
21	,3665191	81	1,4137167	141	2,4609142	21	61087	21	1018	21	17
22	,3839724	82	1,4311700	142	2,4783675	22	63995	22	1067	22	18
23	,4014257	83	1,4486233	143	2,4958208	23	66904	23	1115	23	19
24	,4188790	84	1,4660766	144	2,5132741	24	69813	24	1164	24	19
25	,4363323	85	1,4835299	145	2,5307274	25	72722	25	1212	25	20
26	,4537856	86	1,5009832	146	2,5481807	26	75631	26	1261	26	21
27	,4712389	87	1,5184364	147	2,5656339	27	78540	27	1309	27	22
28	,4886922	88	1,5358897	148	2,5830872	28	81449	28	1357	28	23
29	,5061455	89	1,5533430	149	2,6005405	29	84358	29	1406	29	23
30	,5235988	90	1,5707963	150	2,6179938	30	87266	30	1454	30	24
31	,5410521	91	1,5882496	151	2,6354471	31	90175	31	1503	31	25
32	,5585054	92	1,6057029	152	2,6529004	32	93084	32	1551	32	26
33	,5759587	93	1,6231562	153	2,6703537	33	95993	33	1599	33	27
34	,5934119	94	1,6406095	154	2,6878070	34	98902	34	1648	34	27
35	,6108652	95	1,6580628	155	2,7052603	35	101811	35	1697	35	28
36	,6283185	96	1,6755161	156	2,7227136	36	104720	36	1745	36	29
37	,6457718	97	1,6929693	157	2,7401668	37	107629	37	1794	37	30
38	,6632251	98	1,7104226	158	2,7576201	38	110538	38	1842	38	31
39	,6806784	99	1,7278759	159	2,7750734	39	113446	39	1891	39	32
40	,6981317	100	1,7453292	160	2,7925267	40	116355	40	1939	40	32
41	,7155850	101	1,7627825	161	2,8099800	41	119264	41	1988	41	33
42	,7330383	102	1,7802358	162	2,8274333	42	122173	42	2036	42	34
43	,7504916	103	1,7976891	163	2,8448866	43	125082	43	2085	43	35
44	,7679449	104	1,8151424	164	2,8623399	44	127991	44	2133	44	36
45	,7853982	105	1,8325957	165	2,8797932	45	130900	45	2182	45	36
46	,8028515	106	1,8500490	166	2,8972465	46	133809	46	2230	46	37
47	,8203047	107	1,8675022	167	2,9146997	47	136717	47	2279	47	38
48	,8377580	108	1,8849555	168	2,9321530	48	139626	48	2327	48	39
49	,8552113	109	1,9024088	169	2,9496063	49	142535	49	2376	49	40
50	,8726646	110	1,9198621	170	2,9670596	50	145444	50	2424	50	40
51	,8901179	111	1,9373154	171	2,9845129	51	148353	51	2473	51	41
52	,9075712	112	1,9547687	172	3,0019662	52	151262	52	2521	52	42
53	,9250245	113	1,9722220	173	3,0194195	53	154171	53	2570	53	43
54	,9424778	114	1,9896753	174	3,0368728	54	157080	54	2618	54	44
55	,9599311	115	2,0071286	175	3,0543261	55	159989	55	2666	55	44
56	,9773844	116	2,0245819	176	3,0717794	56	162897	56	2715	56	45
57	,9948377	117	2,0420352	177	3,0892327	57	165806	57	2763	57	46
58	1,0122910	118	2,0594885	178	3,1066860	58	168715	58	2812	58	47
59	1,0297443	119	2,0769418	179	3,1241393	59	171624	59	2860	59	48
60	1,0471976	120	2,0943950	180	3,1415926	60	174533	60	2909	60	48
°	Arc.	°	Arc.	°	Arc.	°	Arc.	°	Arc.	°	A.

T A B. XXVI. *Versed Sines and Areas of circular Segments.* 47

D.M.	Vers. Sine	Diff.	Area.	Diff.	D.M.	Vers. Sine	Diff.	Area	D. ff.
0 00	,000.0000	95	,0000.0000	0	90 00	1,00000000		,28.53982	
15	0095	286	000	1	45	,9.956367	436.33	32213	21.769
30	0381	476	001	1	30	912735	32	10539	674
45	0857	666	002	2	15	869104	31	,27.88960	579
1 00	1523	857	004	5	89 00	825476	28	67477	483
15	2380	1,047	009	6	45	781851	25	46088	389
30	3427	237	015	9	30	738231	20	24795	293
45	4664	426	024	11	15	694615	16	03597	198
2 00	6092	618	035	15	88 00	651005	10	,26.82495	102
15	7710	808	050	19	45	607402	03	61487	008
30	9518	998	069	23	30	563806	435.96	40574	20.913
45	,00.11516	2,189	092	28	15	520219	87	19757	817
3 00	13705	378	120	32	87 00	476640	79	,25.99035	722
15	16083	569	152	38	45	433072	68	78407	628
30	18652	759	190	44	30	389515	57	57875	532
45	21411	948	234	49	15	345969	46	37438	437
4 00	24359	3,139	283	57	86 00	302435	34	17096	342
15	27498	329	340	64	45	258915	20	,24.96848	248
30	30827	518	404	71	30	215409	06	76696	152
45	34345	708	475	79	15	171918	43.491	56638	058
5 00	38053	898	554	87	85 00	128443	475	36676	19.962
15	41951	4,087	641	96	45	084984	459	16808	868
30	46038	277	737	1,05	30	041542	442	,23.97035	773
45	50315	466	842	14	15	,8.998119	423	77357	678
6 00	54781	656	956	25	84 00	954715	404	57773	584
15	59437	844	,000.1081	35	45	911331	384	38285	488
30	64281	5,034	1216	46	30	867968	363	18890	395
45	69315	223	1362	57	15	824626	342	,22.99591	299
7 00	74538	413	1519	68	83 00	781307	319	80386	205
15	79951	600	1687	81	45	738010	297	61275	111
30	85551	790	1868	92	30	694738	272	42259	016
45	91341	978	2060	2,06	15	651491	247	23337	18.922
8 00	97319	6,167	2266	19	82 00	608269	222	04510	827
15	,0.103486	355	2485	33	45	565074	195	,21.85776	734
30	109841	544	2718	47	30	521906	168	67137	639
45	116385	732	2965	61	15	478766	140	48593	544
9 00	123117	919	3226	76	81 00	435655	111	30142	451
15	130036	7,108	3502	91	45	392574	081	11785	357
30	137144	295	3793	3,07	30	349524	050	,20.93522	263
45	144439	483	4100	24	15	306505	019	75353	169
10 00	151922	671	4424	40	80 00	263518	42.987	57278	075
15	159593	858	4764	56	45	220565	953	39297	17.981
30	167451	8,045	5120	74	30	177645	920	21409	888
45	175496	232	5494	92	15	134760	885	03615	794
11 00	183728	419	5886	4,10	79 00	091910	850	,19.85915	700
15	192147	606	6296	29	45	049097	813	68308	607
30	200753	792	6725	47	30	006321	776	50794	514
45	209545	979	7172	67	15	,7 963582	739	33373	421
12 00	218524	9,165	7639	87	78 00	920883	699	16046	327
15	227689	351	8126	5,07	45	878223	660	,18.98812	234
30	237040	537	8633	27	30	835604	619	81671	141
45	246577	722	9160	49	15	793026	578	64623	048
13 00	256299	908	9709	70	77 00	750489	537	47667	16.956
15	266207	10,094	,00.10279	91	45	707996	493	30805	862
30	276301	278	10870	6,14	30	665546	450	14035	770
45	286579	464	11484	37	15	623141	405	,17.97357	678
14 00	297043	648	12121	60	76 00	580781	360	80773	584
15	307691	833	12781	83	45	538467	314	64280	493
30	318524	11,017	13464	7,07	30	496200	267	47880	400
45	329541	201	14171	31	75 15	453981	219	31572	308
D.M.	Vers. Sine	Diff.	Area.	Diff.	D.M.	Vers. Sine	Diff.	Area	Diff.

48 T A B. XXVI. *Versed Sines and Areas of circular Segments.*

\angle	$\frac{1}{2}$	Vers. Sine	Diff.	Area	Diff.	\angle	$\frac{1}{2}$	Vers. Sine	Diff.	Area	Diff.
15	00	0.340742	11.385	00.14902	7.55	75	00	7.411810	42.171	17.15356	16.216
	15	352127	568	15657	81		45	369688	122	16.99231	125
	30	363695	753	16438	8.07		30	327616	072	83199	032
	45	375448	935	17245	32		15	285596	020	67259	15.940
16	00	387383	12.118	18077	58	74	00	243626	41.970	51410	849
	15	399501	302	18935	85		45	201710	916	35652	758
	30	411803	483	19820	9.12		30	159847	863	19986	666
	45	424286	666	20732	39		15	118037	810	04412	574
17	00	436952	849	21671	68	73	00	076283	754	15.88928	484
	15	44980	13.029	22639	95		45	034584	699	73535	393
	30	462830	212	23634	1.024		30	6.992942	642	58234	301
	45	476042	393	24658	053		15	951357	585	43023	211
18	00	489435	574	25711	083	72	00	909830	527	27903	126
	15	503009	754	26794	112		45	868362	468	12873	030
	30	516763	936	27906	143		30	826953	409	14.97934	14.939
	45	530699	14.115	29049	173		15	785605	348	83085	849
19	00	544814	296	30222	204	71	00	744318	287	68326	759
	15	559110	475	31426	236		45	703094	224	53657	669
	30	573585	655	32662	267		30	661931	163	39078	579
	45	588240	834	33929	300		15	620833	098	24589	489
20	00	603074	15.013	35229	332	70	00	579799	034	10189	400
	15	618087	191	36561	365		45	538829	40.970	13.95879	310
	30	633278	370	37926	398		30	497926	903	81658	221
	45	648648	548	39324	432		15	457090	836	67526	132
21	00	664196	725	40756	466	69	00	416321	769	53484	042
	15	679921	903	42222	501		45	375620	701	39530	13.954
	30	695824	16.080	43723	535		30	334988	632	25665	865
	45	711904	257	45258	571		15	294426	562	11888	777
22	00	728161	434	46829	607	68	00	253934	494	12.98200	688
	15	744595	610	48436	642		45	213514	420	84600	600
	30	761205	785	50078	679		30	173166	348	71089	511
	45	777990	961	51757	716		15	132890	276	57665	424
23	00	794951	17.137	53473	753	67	00	092689	201	44329	336
	15	812088	311	55226	791		45	052561	128	31080	249
	30	829399	486	57017	828		30	012509	052	17919	161
	45	846885	660	58845	867		15	5.972533	39.976	04846	073
24	00	864545	835	60712	905	66	00	932634	899	11.91859	12.987
	15	882380	18.007	62617	945		45	892811	823	78959	900
	30	900387	181	64562	984		30	853068	743	66147	812
	45	918568	354	66546	2.024		15	813403	665	53421	726
25	00	936922	527	68570	064	65	00	773817	586	40781	640
	15	955449	698	70634	105		45	734313	504	28228	553
	30	974147	871	72739	146		30	694889	424	15760	468
	45	993018	19.042	74885	187		15	655547	342	03379	381
26	00	1.012060	213	77072	229	64	00	616289	258	10.91083	296
	15	031273	383	79301	271		45	577113	176	78873	210
	30	050656	555	81572	314		30	538022	091	66749	124
	45	070211	724	83886	356		15	499016	006	54709	040
27	00	089935	894	86242	400	63	00	460095	38.921	42755	11.954
	15	109829	20.063	88642	443		45	421201	834	30885	870
	30	129892	232	91085	487		30	382514	747	19100	785
	45	150124	400	93572	531		15	343855	659	07399	701
28	00	170524	569	96103	576	62	00	305284	571	09.95783	616
	15	191093	736	98679	621		45	266803	481	84250	533
	30	211829	903	1.0101300	667		30	228412	391	72802	448
	45	232732	21.071	103967	712		15	190112	300	61437	365
29	00	253803	237	106679	759	61	00	151904	208	50156	281
	15	275040	403	109433	805		45	113788	116	38958	198
	30	296443	569	112243	852		30	075764	024	27843	115
	45	318012	734	115095	899	60	15	037835	37.929	16810	033
		Vers. Sine	Diff.	Area.	Diff.			Vers. Sine	Diff.	Area	Diff.

T A B. XXVI. Versed Sines and Areas of circular Segments.

49

D. M.	Verf. Sine	Diff.	Area	Diff.	D. M.	Verf. Sine	Diff.	Area	Diff.
30 00	1.339746	21.899	01.17994	2.947	60 00	5.000000	37.835	09.05861	10.949
15	361645	22.063	20941	994	45	4.962260	740	08.9499	867
30	383708	228	23935	3.043	30	924616	644	84209	785
45	405936	391	26978	092	15	887069	547	73506	703
31 00	428327	554	30070	141	59 00	849619	450	62885	621
15	450881	717	33211	190	45	812267	352	52345	540
30	473598	880	36401	240	30	775014	253	41887	458
45	496478	23.041	39641	289	15	737861	153	31510	377
32 00	519519	203	42930	341	58 00	700807	054	21214	296
15	542722	364	46271	391	45	663855	36.952	10999	215
30	566086	524	49662	442	30	627004	851	00864	135
45	589610	684	53104	494	15	590255	749	07 90810	054
33 00	613294	844	56598	546	57 00	553610	645	80835	9.975
15	637138	24.004	60144	598	45	517068	542	70941	894
30	661142	162	63742	650	30	480630	438	61126	815
45	685304	320	67392	703	15	444298	332	51390	736
34 00	709624	479	71095	757	56 00	408071	227	41734	656
15	734103	635	74852	810	45	371951	120	32157	577
30	758738	793	78662	864	30	335938	013	22658	499
45	783531	949	82526	918	15	300032	35.906	13237	421
35 00	808480	25.104	86444	973	55 00	264236	796	03895	342
15	833584	261	90417	4.028	45	228548	688	06.94631	264
30	858845	415	94445	083	30	192970	578	85445	186
45	884260	570	98528	138	15	157503	467	76336	109
36 00	909830	724	02.02666	195	54 00	122147	356	67304	032
15	935554	877	06861	251	45	086904	243	58349	8.955
30	961431	26.031	11112	307	30	051772	132	49471	878
45	987462	183	15419	365	15	016754	018	40670	801
37 00	2.013645	335	19784	422	53 00	3.981850	34.904	31945	725
15	039980	487	24206	479	45	947060	790	23299	649
30	066467	637	28685	538	30	912386	674	14723	573
45	093104	788	33223	595	15	877827	559	06225	498
38 00	119892	939	37818	654	52 00	843385	442	05.97802	423
15	146831	27.087	42472	714	45	809061	324	89455	347
30	173918	237	47186	772	30	774854	207	81182	273
45	201155	385	51958	832	15	740765	089	72984	198
39 00	228540	534	56790	892	51 00	706796	33.969	64860	124
15	256074	680	61682	952	45	672947	849	56810	050
30	283754	828	66634	5.013	30	639218	729	48833	7.977
45	311582	974	71647	073	15	605610	608	40931	902
40 00	339556	28.119	76720	135	50 00	572124	486	33101	830
15	367675	265	81855	196	45	538760	364	25344	757
30	395940	410	87051	259	30	505520	240	17660	684
45	424350	554	92310	320	15	472402	118	10048	612
41 00	452904	698	97630	383	49 00	439410	32.992	02509	539
15	481602	841	03.03013	445	45	406542	868	04.95041	468
30	510443	983	08458	508	30	373800	742	87645	396
45	539426	29.126	13966	572	15	341183	617	80320	325
42 00	568552	267	19538	636	48 00	308694	489	73066	254
15	597819	408	25174	700	45	276332	362	65883	183
30	627227	548	30874	764	30	244098	234	58770	113
45	656775	688	36638	828	15	211993	105	51728	042
43 00	686463	827	42466	894	47 00	180016	31.977	44755	6.973
15	716290	966	48360	958	45	148170	846	37852	903
30	746256	30.104	54318	6.024	30	116454	716	31019	833
45	776360	242	60342	091	15	084869	585	24254	765
44 00	806602	379	66433	156	46 00	053416	453	17558	696
15	836981	515	72589	222	45	022095	321	10931	627
30	867496	650	78811	290	30	2.990907	188	04372	559
45	898146	786	85101	356	15	959853	054	03 97881	491
45 00	928932	921	91457	424	45 00	928932	30.921	91457	424

In *Tab. 24*, Those specific Gravities that are mark'd *N*, were taken from Sir *Iaac Newton's Optics*; Those mark'd *C*, from *Cotes's Hydrostatical Lectures*; Those mark'd *M*, from *Musschenbroek's Elements of natural Philosophy*; and Those mark'd *L* were communicated by Mr *Charles Labelye*, Engineer to the Works of *Westminster Bridge*.

The Use of Tables 25th and 26th.

Tab. 25th. contains the Lengths of Arcs; and *Tab. 26th.* the Versed Sines of Arcs, and the Areas of Segments comprehended by those Arcs and their Chords, with their Differences; computed for the Circle whose Radius is Unity.

Put D = an Arc less than a Quadrant in Degrees and Parts,
 D' = an Arc greater than a Quadrant but less than a Semicircle in Degrees and Parts;

A = the Length of an Arc	} of the <i>Tab. Circ.</i>	r = Radius	} of any Circle. x
S = Right Sine		a = Length of an Arc	
V = Versed Sine of D		v = Versed Sine	
V' = Versed Sine of the complement of D to a Quadrant		Z = Area of a Segment	
Z = Area of a Segment			

The most useful Cases arising from the Consideration of the above-mentioned are as follow :

Ca.	Giv.	Req.	Preparation.	Solution.
1	D .	S .	$90 - D$. gives V' ; — —	$S = 1 - V'$.
2	D' .	S .	$D' - 90$. gives V' ; — —	$S = 1 - V'$.
3	D' .	Z .	D' , gives A (<i>Tab. 25.</i>); and S (<i>Case 2.</i>)	$Z = \frac{A - S}{2}$.
4	V .	Z .	V , gives D ; and $2D$, gives — —	Z .
5	Z .	V .	Z , gives D ; and $\frac{1}{2}D$, gives — —	V .
6	$r.D$.	a .	D , gives A ; — — — —	$a = rA$.
7	$r.D$.	v .	D , gives V ; — — — —	$v = rV$.
8	$r.D$.	z .	D , gives Z ; — — — —	$z = rrZ$.
9	$r.a$.	D .	$\frac{a}{r} = A$; and A gives — — — —	D .
10	$r.v$.	D .	$\frac{v}{r} = V$; and V gives — — — —	D .
11	$r.z$.	D .	$\frac{z}{rr} = Z$; and Z gives — — — —	D .
12	$r.v$.	z .	$\frac{v}{r} = V$; V , gives D ; $2D$ gives Z ; — —	$z = rrZ$.
13	$r.z$.	v .	$\frac{z}{rr} = Z$; Z , gives D ; $\frac{1}{2}D$ gives V ; — —	$v = rV$.

	π	$\frac{1}{\pi}$	$\frac{\pi}{4}$	$\frac{1}{4\pi}$	$\frac{4}{\pi}$	4π	
1	3.1415927	.3183099	.7853982	.0795775	1.2732395	12.566371	1
2	6.2831853	.6366198	1.5707963	.1591549	2.5464791	25.132741	2
3	9.4247780	.9549297	2.3561945	.2387324	3.8197186	37.699112	3
4	12.5663706	1.2732395	3.1415927	.3183099	5.0929582	50.265482	4
5	15.7079633	1.5915494	3.9269908	.3978874	6.3661977	62.831853	5
6	18.8495559	1.9098593	4.7123890	.4774648	7.6391373	75.398224	6
7	21.9911486	2.2281692	5.4977871	.5570423	8.9126768	87.964594	7
8	25.1327412	2.5464791	6.2831853	.6366198	10.1859164	100.530965	8
9	28.2743339	2.8647890	7.0685835	.7161972	11.459559	113.097336	9
Log.	0.4971499	1.5028501	1.8950899	2.9007901	0.1049101	1.0992099	Log

	2π	$\frac{\pi}{6}$	$\frac{1}{6\pi\pi}$	$\frac{\pi}{12}$	$\frac{\pi}{8}$	$\frac{4\pi}{3}$	
1	6.2831853	.5235988	.01688686	.2617994	.3926991	4.1887902	1
2	12.5663706	1.0471976	.03377373	.5235988	.7853982	8.3775804	2
3	18.8495559	1.5707963	.05066059	.7853982	1.1780972	12.5663706	3
4	25.1327412	2.0943951	.06754746	1.0471976	1.5707963	16.7551608	4
5	31.4159265	2.6179939	.08443432	1.3089969	1.9634954	20.9439510	5
6	37.6991118	3.1415927	.10132118	1.5707963	2.3561945	25.1327412	6
7	43.9822971	3.6651914	.11820804	1.8325957	2.7488936	29.3215314	7
8	50.2654824	4.1887902	.13509491	2.0943951	3.1415927	33.5103216	8
9	56.5486678	4.7123890	.15198177	2.3561945	3.5342917	37.6991118	9
Log.	0.7981799	1.7189986	2.2275490	1.4179686	1.5940599	0.6220886	Log.

In a Circle and Sphere.

Put r = Radius, d = Diameter, c = Circumference, a = Area of the Circle, Z = Superficies of the Sphere, X = Solidity.

Given	$r =$	$d =$	$c =$	$a =$	$Z =$	$X =$
$r.$		$2r$	$r \times 2\pi$	$rr \times \pi$	$rr \times 4\pi$	$r^3 \times \frac{4\pi}{3}$
$d.$	$\frac{1}{2}d$		$d \times \pi$	$dd \times \frac{\pi}{4}$	$dd \times \pi$	$d^3 \times \frac{\pi}{6}$
$c.$	$\frac{1}{2}c \times \frac{1}{\pi}$	$c \times \frac{1}{\pi}$		$cc \times \frac{1}{4\pi}$	$cc \times \frac{1}{\pi}$	$c^3 \times \frac{1}{6\pi\pi}$
$a.$	$\sqrt{a \times \frac{1}{\pi}}$	$\sqrt{a \times \frac{4}{\pi}}$	$\sqrt{a \times 4\pi}$		$4a$	$\sqrt[4]{\frac{3}{\pi}} \sqrt{a^3 \times \frac{1}{\pi}}$
$Z.$	$\sqrt{Z \times \frac{1}{4\pi}}$	$\sqrt{Z \times \frac{1}{\pi}}$	$\sqrt{Z \times \pi}$	$\frac{1}{4}Z$		$\sqrt[3]{\frac{1}{3}} \sqrt{Z^3 \times \frac{1}{4\pi}}$
$X.$	$\sqrt[3]{3X \times \frac{1}{4\pi}}$	$\sqrt[3]{6X \times \frac{1}{\pi}}$	$\sqrt[3]{6X \times \pi\pi}$	$\sqrt[3]{\frac{9X^2}{16} \times \pi}$	$\sqrt[3]{X^2 \times \frac{4\pi}{3}}$	

52 TABLE XXVIII. Dimensions and Areas of regular Polygons

When the Side of the Polygon is 1				When Rad. of the Circumsf. Cir. is 1			
N ^o . Sid.	Rad. of Cir- cum. Circ.	Rad. of In- scrib. Circ.	Area.	Length of Side.	Rad of In- scrib. Circ.	Area.	N ^o . Sid.
3	0,5773503	0,2886751	0,4330127	1,7320508	0,5000000	1,2990381	3
4	0,7071068	0,5000000	1,0000000	1,4142136	0,7071068	2,0000000	4
5	0,8506508	0,6881910	1,7204774	1,1755705	0,8090170	2,3776412	5
6	1,0000000	0,8660254	2,5980762	1,0000000	0,8660254	2,5980762	6
7	1,1523825	1,0382617	3,6339124	0,8677674	0,9009689	2,7364102	7
8	1,3065630	1,2071068	4,8284271	0,7653668	0,9238795	2,8284271	8
9	1,4619022	1,3737387	6,1818242	0,6840403	0,9396926	2,8925437	9
10	1,6180340	1,5388418	7,6942088	0,6180340	0,9510565	2,9389263	10
11	1,7747329	1,7028437	9,3656404	0,5634651	0,9594931	2,9735250	11
12	1,9318516	1,8660254	11,1961524	0,5176381	0,9659259	3,0000000	12

When the Rad. of the infer. Cir. is 1				When the Area is 1			
N ^o . Sid.	Length of the Side.	Rad. of Cir- cum. Circ.	Area.	Length of the Side.	Rad of Cir- cum. Circ.	Rad of In- scrib. Circ.	N ^o . Sid.
3	3,4641016	2,0000000	5,1961524	1,5196716	0,8773827	0,4386912	3
4	2,0000000	1,4142136	4,0000000	1,0000000	0,7071068	0,5000000	4
5	1,4530851	1,2360680	3,6327128	0,7623870	0,6485251	0,5246678	5
6	1,1547005	1,1547005	3,4641016	0,6204033	0,6204033	0,5372849	6
7	0,9631491	1,1099160	3,3710222	0,5245813	0,6045183	0,5446520	7
8	0,8284271	1,0823919	3,3137084	0,4550899	0,5946034	0,5493420	8
9	0,7279405	1,0641776	3,2757315	0,4021996	0,5879764	0,5525172	9
10	0,6498394	1,0514622	3,2491970	0,3605106	0,5833184	0,5547687	10
11	0,5872521	1,0422172	3,2298913	0,3267617	0,5799148	0,5564242	11
12	0,5358984	1,0352760	3,2153904	0,2988585	0,5773503	0,5576775	12

TABLE XXIX. Concerning Regular Solids.

Put, S = Side, R = Radius of the Circumscribing Sphere, r = Radius of the inscrib'd Sphere, Z = Superficies, X = Solidity.

		Tetraedron.	Hexaedron.	Octaedron.	Dodecaedron.	Icojaedron.
If $S = 1$.	$R =$	0,6123724	0,8660254	0,7071068	1,4012585	0,9510565
	$r =$	0,2041241	0,5000000	0,4082483	1,1135164	0,7557613
	$Z =$	1,7320508	6,0000000	3,4641016	20,6457280	8,6602540
	$X =$	0,1178511	1,0000000	0,4714045	7,6631188	2,1816951
If $R = 1$.	$S =$	1,6329932	1,1547005	1,4142136	0,7136442	1,0514622
	$r =$	0,3333333	0,5773503	0,5773503	0,7946545	0,7946545
	$Z =$	4,6188023	8,0000000	6,9282032	10,5146223	9,5745413
	$X =$	0,5132002	1,5396006	1,3333333	2,7851639	2,5361507
If $r = 1$.	$S =$	4,8989795	2,0000000	2,4494897	0,8980560	1,3231691
	$R =$	3,0000000	1,7320508	1,7320508	1,2584086	1,2584086
	$Z =$	41,5692192	24,0000000	20,7846096	16,6508731	15,1621684
	$X =$	13,8564064	8,0000000	6,9282032	5,5502910	5,0540561
If $Z = 1$.	$S =$	0,7598357	0,4082483	0,5372850	0,2200822	0,3398080
	$R =$	0,4653025	0,3535534	0,3799178	0,3083920	0,3231774
	$r =$	0,1551008	0,2041241	0,2193457	0,2450651	0,2568144
	$X =$	0,0517003	0,0680413	0,0731152	0,0816884	0,0856048
If $X = 1$.	$S =$	2,0395489	1,0000000	1,2848990	0,5072221	0,7710254
	$R =$	1,1547006	0,8660254	0,9080604	0,7107492	0,7332887
	$r =$	0,4163417	0,5000000	0,5245576	0,5648000	0,5827111
	$Z =$	7,2056240	6,0000000	5,7191069	5,3116140	5,1483486

Put S = Side.

R = Radius of the circumscribing Circle.

r = Radius of the inscrib'd Circle.

a = Area of the Polygon.

T = The proper Tabular Number.

Given.	
S	$R = S T; r = S T; a = S S T.$
R	$S = R T; r = R T; a = R R T.$
r	$S = r T; R = r T; a = r r T.$
a	$S = \sqrt{a T}; R = \sqrt{a T}, r = \sqrt{a T}.$

The Use of Table the 29th.

Let T = the proper Tabular Number.

Given.	
S	$R = S T; r = S T; Z = S S T; X = S S S T.$
R	$S = R T; r = R T; Z = R R T; X = R R R T.$
r	$S = r T; R = r T; Z = r r T; X = r r r T.$
Z	$S = \sqrt{Z T}; R = \sqrt{Z T}; r = \sqrt{Z T}; X = \sqrt{Z^3 T}.$
X	$S = \sqrt[3]{X T}; R = \sqrt[3]{X T}; r = \sqrt[3]{X T}; Z = \sqrt[3]{X^2 T}.$

Use of Table 30.

The most necessary Cases of Navigation.

CASE I.

Given the Lattitudes and Departure;

Required the Course, Distance and Difference of Longitude.

- I. With the Difference of Latitude and Departure taken together, find the Course among the Degrees, and Distance at the Head of the Columns.
- II. With the Co-middle Latitude among the Degrees and Departure in it's Column, find the Difference of Longitude among the Distances.

CASE II.

Given the Lattitudes and Longitudes of two Places;

Required the Bearings and Distance.

- I. With the Co-middle Latitude among the Degrees and Difference of Longitude among the Distances, find the Departure in its Column.
- II. With the Difference of Latitude and Departure taken together, find the Course among the Degrees and Distance at Top.

CASE III.

Given the Course and Distance sail'd;

Required the Difference of Latitude and Longitude.

- I. With the Course among the Degrees and Distance at the Top of the Columns, find the Difference of Latitude and Departure in their Columns.
- II. With the Co-middle Latitude among the Degrees and Departure in its Column, find the Difference of Longitude among the Distances.

Cour.	Dist. 1.		Dist. 2.		Dist. 3.		Dist. 4.		Dist. 5.		Cour.	
Prs.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	D. Pts.	
0. $\frac{1}{4}$	1	0,9998	0,0175	0,9997	0,0349	2,9995	0,0524	3,9994	0,0698	4,9992	0,0873	89
	2	0,9994	0,0349	1,9988	0,0698	2,9982	0,1047	3,9976	0,1396	4,9970	0,1745	88
	3	0,9988	0,0491	1,9976	0,0981	2,9964	0,1472	3,9952	0,1963	4,9940	0,2453	7. $\frac{3}{4}$
	4	0,9986	0,0523	1,9973	0,1047	2,9959	0,1570	3,9945	0,2093	4,9931	0,2617	87
	5	0,9976	0,0698	1,9951	0,1395	2,9927	0,2093	3,9903	0,2790	4,9878	0,3488	86
	6	0,9962	0,0872	1,9924	0,1743	2,9886	0,2615	3,9848	0,3486	4,9810	0,4358	85
	7	0,9952	0,0980	1,9904	0,1960	2,9856	0,2940	3,9807	0,3921	4,9759	0,4901	7. $\frac{1}{2}$
	8	0,9945	0,1045	1,9890	0,2091	2,9836	0,3136	3,9781	0,4181	4,9720	0,5226	84
0. $\frac{1}{2}$	9	0,9925	0,1219	1,9851	0,2437	2,9776	0,3656	3,9702	0,4875	4,9627	0,6093	83
	10	0,9903	0,1392	1,9805	0,2783	2,9708	0,4175	3,9611	0,5567	4,9513	0,6959	82
	11	0,9892	0,1467	1,9784	0,2935	2,9675	0,4402	3,9567	0,5869	4,9459	0,7337	7. $\frac{1}{4}$
	12	0,9877	0,1564	1,9754	0,3129	2,9631	0,4693	3,9508	0,6257	4,9384	0,7822	81
	13	0,9848	0,1736	1,9696	0,3473	2,9544	0,5209	3,9392	0,6946	4,9240	0,8682	80
	14	0,9816	0,1908	1,9633	0,3816	2,9449	0,5724	3,9265	0,7632	4,9081	0,9540	79
	15	0,9808	0,1951	1,9616	0,3902	2,9424	0,5853	3,9231	0,7804	4,9039	0,9754	7.
	16	0,9781	0,2079	1,9563	0,4158	2,9344	0,6237	3,9126	0,8316	4,8907	1,0396	78
I.	17	0,9744	0,2250	1,9487	0,4499	2,9231	0,6749	3,8975	0,8998	4,8718	1,1248	77
	18	0,9703	0,2419	1,9406	0,4838	2,9108	0,7258	3,8812	0,9677	4,8515	1,2096	76
	19	0,9700	0,2430	1,9401	0,4860	2,9101	0,7289	3,8801	0,9719	4,8502	1,2149	6. $\frac{3}{4}$
	20	0,9659	0,2588	1,9319	0,5176	2,8978	0,7765	3,8637	1,0353	4,8296	1,2941	75
	21	0,9613	0,2756	1,9225	0,5513	2,8838	0,8269	3,8450	1,1025	4,8063	1,3782	74
	22	0,9569	0,2903	1,9139	0,5806	2,8708	0,8709	3,8278	1,1611	4,7847	1,4514	6. $\frac{1}{2}$
	23	0,9563	0,2924	1,9126	0,5847	2,8689	0,8771	3,8252	1,1695	4,7815	1,4619	73
	24	0,9511	0,3090	1,9021	0,6180	2,8532	0,9271	3,8042	1,2361	4,7553	1,5451	72
I. $\frac{3}{4}$	25	0,9455	0,3256	1,8910	0,6511	2,8366	0,9767	3,7821	1,3023	4,7276	1,6278	71
	26	0,9415	0,3369	1,8831	0,6738	2,8246	1,0107	3,7662	1,3476	4,7077	1,6844	6. $\frac{1}{4}$
	27	0,9397	0,3420	1,8794	0,6840	2,8191	1,0261	3,7588	1,3681	4,6985	1,7161	70
	28	0,9336	0,3584	1,8672	0,7167	2,8007	1,0751	3,7343	1,4335	4,6679	1,7918	69
	29	0,9272	0,3746	1,8544	0,7492	2,7816	1,1238	3,7087	1,4984	4,6359	1,8730	68
	30	0,9239	0,3827	1,8478	0,7654	2,7716	1,1480	3,6955	1,5307	4,6194	1,9134	6.
	31	0,9205	0,3907	1,8410	0,7815	2,7615	1,1722	3,6820	1,5629	4,6025	1,9537	67
	32	0,9135	0,4067	1,8270	0,8135	2,7406	1,2202	3,6542	1,6269	4,5677	2,0337	66
2.	33	0,9063	0,4226	1,8126	0,8452	2,7189	1,2679	3,6252	1,6905	4,5315	2,1131	65
	34	0,9040	0,4276	1,8080	0,8551	2,7120	1,2827	3,6160	1,7102	4,5199	2,1378	5. $\frac{3}{4}$
	35	0,8988	0,4384	1,7976	0,8767	2,6964	1,3151	3,5952	1,7535	4,4940	2,1919	64
	36	0,8910	0,4540	1,7820	0,9080	2,6730	1,3620	3,5640	1,8160	4,4550	2,2699	63
	37	0,8829	0,4695	1,7659	0,9389	2,6488	1,4084	3,5318	1,8779	4,4147	2,3474	62
	38	0,8819	0,4714	1,7638	0,9428	2,6458	1,4142	3,5277	1,8850	4,4096	2,3570	5. $\frac{1}{2}$
	39	0,8746	0,4848	1,7492	0,9696	2,6239	1,4544	3,4985	1,9392	4,3731	2,4240	61
	40	0,8660	0,5000	1,7320	1,0000	2,5981	1,5000	3,4641	2,0000	4,3301	2,5000	60
2. $\frac{3}{4}$	41	0,8577	0,5141	1,7155	1,0282	2,5732	1,5423	3,4309	2,0564	4,2886	2,5705	5. $\frac{1}{4}$
	42	0,8572	0,5150	1,7143	1,0301	2,5715	1,5451	3,4287	2,0602	4,2858	2,5752	59
	43	0,8480	0,5299	1,6961	1,0598	2,5441	1,5896	3,3922	2,1197	4,2402	2,6496	58
	44	0,8387	0,5446	1,6773	1,0893	2,5160	1,6339	3,3547	2,1786	4,1934	2,7232	57
	45	0,8315	0,5556	1,6629	1,1111	2,4944	1,6667	3,3259	2,2223	4,1573	2,7778	5.
	46	0,8290	0,5592	1,6581	1,1184	2,4871	1,6776	3,3162	2,2368	4,1452	2,7960	56
	47	0,8192	0,5736	1,6383	1,1472	2,4575	1,7207	3,2766	2,2943	4,0958	2,8679	55
	48	0,8090	0,5878	1,6180	1,1756	2,4271	1,7634	3,2361	2,3511	4,0451	2,9389	54
3. $\frac{1}{4}$	49	0,8032	0,5957	1,6064	1,1914	2,4096	1,7871	3,2128	2,3828	4,0160	2,9785	4. $\frac{3}{4}$
	50	0,7986	0,6088	1,5973	1,2036	2,3959	1,8054	3,1945	2,4073	3,9932	3,0091	53
	51	0,7880	0,6157	1,5760	1,2313	2,3640	1,8470	3,1520	2,4626	3,9401	3,0783	52
	52	0,7771	0,6293	1,5543	1,2586	2,3314	1,8880	3,1086	2,5173	3,8857	3,1466	51
	53	0,7730	0,6344	1,5460	1,2688	2,3190	1,9032	3,0920	2,5376	3,8650	3,1720	4. $\frac{1}{2}$
	54	0,7660	0,6428	1,5321	1,2856	2,2981	1,9284	3,0642	2,5712	3,8302	3,2139	50
	55	0,7547	0,6561	1,5094	1,3121	2,2641	1,9682	3,0188	2,6242	3,7736	3,2803	49
	56	0,7431	0,6691	1,4863	1,3383	2,2294	2,0074	2,9726	2,6765	3,7157	3,3457	48
3. $\frac{3}{4}$	57	0,7410	0,6716	1,4819	1,3431	2,2229	2,0147	2,9638	2,6862	3,7048	3,3578	4. $\frac{1}{4}$
	58	0,7314	0,6820	1,4628	1,3640	2,1941	2,0460	2,9254	2,7280	3,6568	3,4100	47
	59	0,7193	0,6947	1,4387	1,3894	2,1580	2,0840	2,8774	2,7786	3,5967	3,4733	46
	60	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	45
	61	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	44
	62	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	43
	63	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	42
	64	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	41
4.	65	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	40
	66	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	39
	67	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	38
	68	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	37
	69	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	36
	70	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	35
	71	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	34
	72	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	33
Pts	73	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	32
	74	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	31
	75	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	30
	76	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	29
	77	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	28
	78	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	27
	79	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	26
	80	0,7071	0,7071	1,4142	1,4142	2,1213	2,1213	2,8284	2,8284	3,5355	3,5355	25

55

Cour.	Dist. 6.	Dist. 7.	Dist. 8.	Dist. 9.	Dist. 10.	Cour.					
Pts D	Lat.	Dep.	Lat.	Dep.	Lat.	Pts.					
0. 1/4	1 5,9991	0,1047	0,9989	0,1222	7,9988	0,1396	8,9986	0,1571	9,9985	0,1745	89
	2 5,9963	0,2094	0,9957	0,2443	7,9951	0,2792	8,9945	0,3141	9,9939	0,3490	88
	3 5,9928	0,2944	0,9916	0,3435	7,9904	0,3925	8,9892	0,4416	9,9880	0,4907	87
	4 5,9854	0,3418	0,9829	0,4883	7,9805	0,5580	8,9781	0,6278	9,9756	0,6976	86
	5 5,9772	0,5229	0,9734	0,6101	7,9696	0,6972	8,9658	0,7844	9,9609	0,8716	85
0. 1/2	5 5,9711	0,5881	0,9663	0,6861	7,9615	0,7841	8,9567	0,8822	9,9518	0,9802	84
	6 5,9671	0,6272	0,9617	0,7317	7,9562	0,8362	8,9507	0,9408	9,9452	1,0453	83
	7 5,9553	0,7112	0,9478	0,8531	7,9404	0,9750	8,9329	1,0968	9,9255	1,2187	82
0. 3/4	8 5,9416	0,8350	0,9319	0,9742	7,9221	1,1134	8,9124	1,2526	9,9027	1,3917	81
	9 5,9351	0,8804	0,9242	1,0271	7,9134	1,1738	8,9026	1,3206	9,8918	1,4674	80
	10 5,9261	0,9386	0,9138	1,0950	7,9015	1,2515	8,8892	1,4079	9,8769	1,5643	79
	11 5,9088	1,0419	0,8937	1,2155	7,8785	1,3802	8,8633	1,5628	9,8481	1,7365	78
	12 5,8898	1,1449	0,8714	1,3357	7,8530	1,5265	8,8346	1,7173	9,8163	1,9081	77
1.	13 5,8847	1,1705	0,8655	1,3656	7,8463	1,5607	8,8271	1,7558	9,8079	1,9509	76
	14 5,8689	1,2475	0,8470	1,4554	7,8252	1,6633	8,8033	2,8712	9,7815	2,0791	75
	15 5,8462	1,3497	0,8206	1,5746	7,7950	1,7996	8,7693	2,0246	9,7437	2,2495	74
1. 1/4	16 5,8218	1,4515	0,7921	1,6935	7,7624	1,9354	8,7327	2,1773	9,7030	2,4192	73
	17 5,8202	1,4579	0,7900	1,7009	7,7602	1,9438	8,7303	2,1868	9,7003	2,4298	72
	18 5,7956	1,5529	0,7611	1,8117	7,7274	2,0706	8,6933	2,3294	9,6593	2,5882	71
1. 1/2	19 5,7676	1,6538	0,7288	1,9293	7,6901	2,2051	8,6513	2,4807	9,6120	2,7562	70
	20 5,7416	1,7417	0,6986	2,0320	7,6555	2,3223	8,6125	2,6126	9,5694	2,9028	69
	21 5,7378	1,7542	0,6941	2,0468	7,6504	2,3390	8,6067	2,6313	9,5630	2,9237	68
	22 5,7063	1,8541	0,6574	2,1631	7,6084	2,4721	8,5595	2,7812	9,5106	3,0902	67
	23 5,6731	1,9534	0,6186	2,2790	7,5642	2,6045	8,5097	2,9301	9,4552	3,2551	66
1. 3/4	24 5,6493	2,0213	0,5908	2,3582	7,5324	2,6951	8,4739	3,0320	9,4154	3,3089	65
	25 5,6382	2,0521	0,5779	2,3941	7,5175	2,7362	8,4572	3,0782	9,3969	3,4202	64
	26 5,6015	2,1502	0,5351	2,5086	7,4686	2,8669	8,4022	3,2253	9,3358	3,5837	63
	27 5,5631	2,2476	0,4903	2,6222	7,4175	2,9969	8,3447	3,3715	9,2718	3,7461	62
	28 5,5413	2,2961	0,4672	2,6782	7,3910	3,0615	8,3149	3,4441	9,2388	3,8268	61
2.	29 5,5230	2,3444	0,4431	2,7351	7,3640	3,1258	8,2845	3,5160	9,2050	3,9075	60
	30 5,4813	2,4404	0,3948	2,8472	7,3084	3,2539	8,2219	3,6606	9,1355	4,0674	59
	31 5,4378	2,5357	0,3442	2,9583	7,2505	3,3809	8,1568	3,8036	9,0631	4,2262	58
	32 5,4239	2,5653	0,3279	2,9929	7,2319	3,4204	8,1359	3,8480	9,0399	4,2756	57
	33 5,3928	2,6302	0,2910	3,0680	7,1904	3,5070	8,0891	3,9453	8,9879	4,3837	56
2. 1/4	34 5,3460	2,7239	0,2370	3,1779	7,1280	3,6319	8,0191	4,0859	8,9101	4,5399	55
	35 5,2977	2,8168	0,1806	3,2863	7,0636	3,7558	7,9465	4,2252	8,8295	4,6947	54
	36 5,2915	2,8284	0,1734	3,2998	7,0554	3,7712	7,9373	4,2426	8,8192	4,7140	53
	37 5,2477	2,9089	0,1223	3,3937	6,9910	3,8785	7,8716	4,3633	8,7462	4,8481	52
	38 5,1961	3,0000	0,0622	3,5000	6,9282	4,0000	7,7942	4,5000	8,6603	5,0000	51
2. 3/4	39 5,1464	3,0846	0,0041	3,5987	6,8618	4,1128	7,7196	4,6269	8,5773	5,1410	50
	40 5,1430	3,0902	0,0002	3,6052	6,8573	4,1203	7,7145	4,6353	8,5717	5,1504	49
	41 5,0883	3,1795	0,9363	3,7094	6,7843	4,2394	7,6324	4,7693	8,4805	5,2992	48
	42 5,0320	3,2678	0,8707	3,8125	6,7094	4,3571	7,5480	4,9011	8,3867	5,4464	47
	43 4,9888	3,3334	0,8203	3,8890	6,6518	4,4446	7,4832	5,0001	8,3147	5,5557	46
3.	44 4,9742	3,3552	0,8033	3,9144	6,6323	4,4735	7,4813	5,0327	8,2904	5,5919	45
	45 4,9149	3,4415	0,7341	4,0150	6,5532	4,5886	7,3724	5,1622	8,1915	5,7350	44
	46 4,8541	3,5267	0,6631	4,1145	6,4721	4,7023	7,2812	5,2901	8,0902	5,8779	43
	47 4,8192	3,5742	0,6224	4,1699	6,4257	4,7656	7,2289	5,3613	8,0321	5,9570	42
	48 4,7918	3,6109	0,5904	4,2127	6,3891	4,8145	7,1877	5,4163	7,9864	6,0182	41
3. 1/2	49 4,7281	3,6940	0,5516	4,3096	6,3041	4,9253	7,0921	5,5409	7,8801	6,1566	40
	50 4,6629	3,7759	0,5440	4,4052	6,2172	5,0346	6,9943	5,6639	7,7715	6,2932	39
	51 4,6381	3,8064	0,5411	4,4408	6,1841	5,0751	6,9571	5,7095	7,7301	6,3439	38
	52 4,5963	3,8567	0,5362	4,4995	6,1284	5,1423	6,8944	5,7851	7,6604	6,4279	37
	53 4,5283	3,9363	0,5283	4,5924	6,0377	5,2485	6,7924	5,9045	7,5471	6,5606	36
3. 3/4	54 4,4589	4,0148	0,5202	4,6839	5,9452	5,3530	6,6883	6,0222	7,4314	6,6913	35
	55 4,4457	4,0294	0,5186	4,7009	5,9276	5,3725	6,6686	6,0440	7,4095	6,7156	34
	56 4,3881	4,0920	0,5119	4,7740	5,8508	5,4560	6,5822	6,1380	7,3135	6,8200	33
	57 4,3160	4,1679	0,5035	4,8620	5,7547	5,5573	6,4741	6,2519	7,1934	6,9466	32
	58 4,2426	4,2426	0,4949	4,9497	5,6569	5,6569	6,3640	6,3640	7,0711	7,0711	31
4.	Pts D.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Pts.

Appar. Alitu.	Doctor Halley	Sr Isaac Newton.				Mr Flam- steed.		Dr Brook Taylor.	
		Summ.	Spring, Autum.	Winter.					
		Deg.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min.	Sec.	Min.
0.	33 45	31 0	33 0	35 0	33 0	31 0,07			
0 $\frac{1}{4}$	30 24								
0 $\frac{1}{2}$	27 35	25 53	27 30	29 7	26 38				
0 $\frac{3}{4}$	25 11								
1.	23 7	21 48	23 10	24 32	23 22	23 5,32			
1 $\frac{1}{4}$	21 20								
1 $\frac{1}{2}$	19 46	18 51	20 2	21 13	20 17				
1 $\frac{3}{4}$	18 22								
2.	17 8	16 27	17 29	18 31	17 26	17 34,75			
2 $\frac{1}{2}$	15 2	14 31	15 23	16 15	15 15				
3.	13 20	12 52	13 40	14 28	13 23	13 49,59			
3 $\frac{1}{2}$	11 57	11 32	12 15	12 58	11 53				
4.	10 48	10 25	11 4	11 43	10 39	11 13,98			
4 $\frac{1}{2}$	9 50	9 29	10 5	10 41	9 38				
5.	9 02	8 40	9 13	9 46	8 48	9 23,06			
5 $\frac{1}{2}$	8 21								
6.	7 45	7 24	7 52	8 20	7 26	8 01,24			
6 $\frac{1}{2}$	7 14								
7.	6 47	6 27	6 51	7 15	6 25	6 58,93			
7 $\frac{1}{2}$	6 22								
8.	6 0	5 42	6 3	6 24	5 37	6 10,14			
8 $\frac{1}{2}$	5 40								
9.	5 22	5 5	5 25	5 43	5 2	5 31,03			
9 $\frac{1}{2}$	5 06								
10	4 52	4 36	4 53	5 10	4 33	4 59,03			
11	4 27	4 11	4 27	4 43	4 6	4 32,38			
12	4 5	3 51	4 5	4 19	3 45	4 10,67			
13	3 47	3 33	3 46	3 59	3 29	3 50,62			
14	3 31	3 18	3 30	3 42	3 13	3 33,945			
15	3 17	3 4	3 16	3 28	3 0	3 19,386			
16	3 4	2 52	3 3	3 14	2 48	3 06,536			
17	2 53	2 42	2 52	3 2	2 38	2 56,122			
18	2 43	2 33	2 42	2 51	2 29	2 44,922			
19	2 34	2 24	2 33	2 42	2 21	2 35,737			
20	2 26	2 17	2 25	2 33	2 14	2 27,421			
21	2 18	2 9	2 17	2 25	2 7	2 19,854			
22	2 11	2 2	2 10	2 18	2 1	2 12,937			
23	2 5	1 57	2 4	2 11	1 55	2 06,588			
24	1 59	1 51	1 58	2 5	1 50	2 00,733			
25	1 54	1 46	1 53	2 0	1 45	1 55,319			
26	1 49	1 42	1 48	1 54	1 40	1 50,293			
27	1 44	1 37	1 43	1 49	1 36	1 45,615			
28	1 40	1 33	1 39	1 45	1 31	1 41,246			
29	1 36	1 30	1 35	1 40	1 27	1 37,154			
30	1 32	1 26	1 31	1 36	1 23	1 33,311			
31	1 28		1 28		1 20	1 29,694			
32	1 25		1 24		1 17	1 26,283			
33	1 22		1 21		1 14	1 23,058			
34	1 19		1 18		1 11	1 20,002			
35	1 16		1 15		1 9	1 17,100			
36	1 13		1 13		1 7	1 14,340			
37	1 11		1 10		1 5	1 11,711			
38	1 8		1 8		1 2	1 09,202			

REFRACTION by

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Appar. Altitu.	Doctor Halley	Sr Isaac Newton.			Mr Flam- steed.	Dr Brook Taylor.
		Summ.	Spring, Autum.	Winter.		
Deg.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.	Min. Sec.
39	I 6		I 5		I 0	I 06,803
40	I 4		I 3		0 58	I 04,506
41	I 2		I 1		56	I 02,303
42	I 0		0 59		54	I 00,188
43	0 58		57		52	58,155
44	56		55		50	56,197
45	54		53		48	54,309
46	52		51		46	52,451
47	50		49		45	50,653
48	48		48		44	48,913
49	47		46		42	47,226
50	45		44		40	45,589
51	44		43			43,999
52	42		41			42,453
53	40		40			40,949
54	39		38			39,483
55	38		37		34	38,053
56	36		35			36,658
57	35		34			35,296
58	34		33			33,964
59	32		32			32,660
60	31		30		29	31,383
61	30		29			30,131
62	28		28			28,904
63	27		27			27,699
64	26		26			26,515
65	25		24			25,351
66	24		23			24,206
67	23		22			23,078
68	22		21			21,967
69	21		20			20,871
70	20		19		19	19,790
71	19		18			18,722
72	18		17			17,667
73	17		16			16,624
74	16		15			15,592
75	15		14			14,570
76			13			13,558
77			12			12,554
78			11			11,5584
79			10			10,5702
80			9		9	9,5886
81			8			8,6129
82			7			7,6426
83			6			6,6771
84			5			5,7156
85			5			4,7577
86			4			3,8027
87			3			2,8500
88			2			1,8990
89			1			0,94923
90			0		0	



T A B. XXXII.

B R I G G S's

LOGARITHMS.



N ^o .	Log.	N ^o .	Log.	N ^o .	Log.	N ^o .	Log.	N ^o .	Log.
0		20	,3010300	40	,6020600	60	,7781513	80	,9030900
1	,0000000	21	,3222193	41	,6127839	61	,7853298	81	,9084850
2	,3010300	22	,3424227	42	,6232493	62	,7923917	82	,9138139
3	,4771213	23	,3617278	43	,6334685	63	,7993405	83	,9190781
4	,6020600	24	,3802112	44	,6434527	64	,8061800	84	,9242793
5	,6989700	25	,3979400	45	,6532125	65	,8129134	85	,9294189
6	,7781513	26	,4149733	46	,6627578	66	,8195439	86	,9344985
7	,8450980	27	,4313638	47	,6720979	67	,8260748	87	,9395193
8	,9030900	28	,4471580	48	,6812412	68	,8325089	88	,9444827
9	,9542425	29	,4623980	49	,6901961	69	,8388491	89	,9493900
10	,0000000	30	,4771213	50	,6989700	70	,8450980	90	,9542425
11	,0413927	31	,4913617	51	,7075702	71	,8512583	91	,9590414
12	,0791812	32	,5051500	52	,7160033	72	,8573325	92	,9637878
13	,1139434	33	,5185139	53	,7242759	73	,8633229	93	,9684829
14	,1461280	34	,5314789	54	,7323938	74	,8692317	94	,9731279
15	,1760913	35	,5440680	55	,7403627	75	,8750613	95	,9777236
16	,2041200	36	,5563025	56	,7481880	76	,8808136	96	,9822712
17	,2304489	37	,5682017	57	,7558749	77	,8864907	97	,9867717
18	,2552725	38	,5797836	58	,7634280	78	,8920946	98	,9912261
19	,2787536	39	,5910646	59	,7708520	79	,8976271	99	,9956352
N ^o .	Log.	N ^o .	Log.	N ^o .	Log.	N ^o .	Log.	N ^o .	Log.

N ^o .	Log.	N ^o .	Log.	N ^o .	Log.	N ^o .	Log.	N ^o .	Log.
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101	,0043214	161	,2068259	221	,3443923	281	,4487063	341	,5327544
102	,0086002	162	,2095150	222	,3463530	282	,4502491	342	,5340261
103	,0128372	163	,2121876	223	,3483049	283	,4517864	343	,5352941
104	,0170333	164	,2148438	224	,3502480	284	,4533183	344	,5365584
105	,0211893	165	,2174839	225	,3521825	285	,4548449	345	,5378191
106	,0253059	166	,2201081	226	,3541084	286	,4563660	346	,5390761
107	,0293838	167	,2227165	227	,3560259	287	,4578819	347	,5403295
108	,0334238	168	,2253093	228	,3579348	288	,4593925	348	,5415792
109	,0374265	169	,2278867	229	,3598355	289	,4608978	349	,5428254
110	,0413927	170	,2304489	230	,3617278	290	,4623980	350	,5440680
111	,0453230	171	,2329961	231	,3636120	291	,4638930	351	,5453071
112	,0492180	172	,2355284	232	,3654880	292	,4653829	352	,5465427
113	,0530784	173	,2380461	233	,3673559	293	,4668676	353	,5477747
114	,0569049	174	,2405492	234	,3692159	294	,4683473	354	,5490033
115	,0606978	175	,2430380	235	,3710679	295	,4698220	355	,5502284
116	,0644580	176	,2455127	236	,3729120	296	,4712917	356	,5514500
117	,0681859	177	,2479733	237	,3747483	297	,4727564	357	,5526682
118	,0718820	178	,2504200	238	,3765770	298	,4742163	358	,5538830
119	,0755470	179	,2528530	239	,3783979	299	,4756712	359	,5550944
120	,0791812	180	,2552725	240	,3802112	300	,4771213	360	,5563025
121	,0827854	181	,2576786	241	,3820170	301	,4785665	361	,5575072
122	,0863598	182	,2600714	242	,3838154	302	,4800069	362	,5587086
123	,0899051	183	,2624511	243	,3856063	303	,4814426	363	,5599066
124	,0934217	184	,2648178	244	,3873898	304	,4828736	364	,5611014
125	,0969100	185	,2671717	245	,3891661	305	,4842998	365	,5622929
126	,1003705	186	,2695129	246	,3909351	306	,4857214	366	,5634811
127	,1038037	187	,2718416	247	,3926970	307	,4871384	367	,5646661
128	,1072100	188	,2741578	248	,3944517	308	,4885507	368	,5658478
129	,1105897	189	,2764618	249	,3961993	309	,4899585	369	,5670264
130	,1139434	190	,2787536	250	,3979400	310	,4913617	370	,5682017
131	,1172713	191	,2810334	251	,3996737	311	,4927604	371	,5693739
132	,1205739	192	,2833012	252	,4014005	312	,4941546	372	,5705429
133	,1238516	193	,2855573	253	,4031205	313	,4955443	373	,5717088
134	,1271048	194	,2878017	254	,4048337	314	,4969296	374	,5728716
135	,1303338	195	,2900346	255	,4065402	315	,4983106	375	,5740313
136	,1335389	196	,2922561	256	,4082400	316	,4996871	376	,5751878
137	,1367206	197	,2944662	257	,4099331	317	,5010593	377	,5763414
138	,1398791	198	,2966652	258	,4116197	318	,5024271	378	,5774918
139	,1430148	199	,2988531	259	,4132998	319	,5037907	379	,5786392
140	,1461280	200	,3010300	260	,4149733	320	,5051500	380	,5797836
141	,1492191	201	,3031961	261	,4166405	321	,5065050	381	,5809250
142	,1522883	202	,3053514	262	,4183013	322	,5078559	382	,5820634
143	,1553360	203	,3074960	263	,4199557	323	,5092025	383	,5831988
144	,1583625	204	,3096302	264	,4216039	324	,5105450	384	,5843312
145	,1613680	205	,3117539	265	,4232459	325	,5118834	385	,5854607
146	,1643529	206	,3138672	266	,4248816	326	,5132176	386	,5865873
147	,1673173	207	,3159703	267	,4265113	327	,5145478	387	,5877110
148	,1702617	208	,3180633	268	,4281348	328	,5158738	388	,5888317
149	,1731863	209	,3201463	269	,4297523	329	,5171959	389	,5899496
150	,1760913	210	,3222193	270	,4313638	330	,5185139	390	,5910646
151	,1789769	211	,3242825	271	,4329693	331	,5198280	391	,5921768
152	,1818436	212	,3263359	272	,4345689	332	,5211381	392	,5932861
153	,1846914	213	,3283796	273	,4361626	333	,5224442	393	,5943926
154	,1875207	214	,3304138	274	,4377506	334	,5237465	394	,5954962
155	,1903317	215	,3324385	275	,4393327	335	,5250448	395	,5965971
156	,1931246	216	,3344538	276	,4409091	336	,5263393	396	,5976952
157	,1958997	217	,3364597	277	,4424798	337	,5276299	397	,5987905
158	,1986571	218	,3384560	278	,4440448	338	,5289167	398	,5998831
159	,2013971	219	,3404441	279	,4456042	339	,5301997	399	,6009729
N ^o .	Log.	N ^o .	Log.	N ^o .	Log.	N ^o .	Log.	N ^o .	Log.

N ^o .	Log.	N ^o .	Log.	N ^o .	Log.	N ^o .	Log.	N ^o .	Log.
400	,6020600	460	,6627578	520	,7160033	580	,7634280	640	,8061800
401	,6031444	461	,6637009	521	,7168377	581	,7641761	641	,8068580
402	,6042261	462	,6646420	522	,7176705	582	,7649230	642	,8075350
403	,6053050	463	,6655810	523	,7185017	583	,7656685	643	,8082110
404	,6063814	464	,6665180	524	,7193313	584	,7664128	644	,8088859
405	,6074550	465	,6674530	525	,7201593	585	,7671559	645	,8095597
406	,6085260	466	,6683859	526	,7209857	586	,7678976	646	,8102325
407	,6095944	467	,6693169	527	,7218106	587	,7686381	647	,8109043
408	,6106602	468	,6702459	528	,7226339	588	,7693773	648	,8115750
409	,6117233	469	,6711728	529	,7234557	589	,7701153	649	,8122447
410	,6127839	470	,6720979	530	,7242759	590	,7708520	650	,8129134
411	,6138418	471	,6730209	531	,7250945	591	,7715875	651	,8135810
412	,6148972	472	,6739420	532	,7259116	592	,7723217	652	,8142476
413	,6159501	473	,6748611	533	,7267272	593	,7730547	653	,8149132
414	,6170003	474	,6757783	534	,7275413	594	,7737864	654	,8155777
415	,6180481	475	,6766936	535	,7283538	595	,7745170	655	,8162413
416	,6190933	476	,6776070	536	,7291648	596	,7752463	656	,8169038
417	,6201361	477	,6785184	537	,7299743	597	,7759743	657	,8175654
418	,6211763	478	,6794279	538	,7307823	598	,7767012	658	,8182259
419	,6222140	479	,6803355	539	,7315888	599	,7774268	659	,8188854
420	,6232493	480	,6812412	540	,7323938	600	,7781513	660	,8195439
421	,6242821	481	,6821451	541	,7331973	601	,7788745	661	,8202015
422	,6253125	482	,6830470	542	,7339993	602	,7795965	662	,8208580
423	,6263404	483	,6839471	543	,7347998	603	,7803173	663	,8215135
424	,6273659	484	,6848454	544	,7355989	604	,7810369	664	,8221681
425	,6283889	485	,6857417	545	,7363965	605	,7817554	665	,8228216
426	,6294096	486	,6866363	546	,7371926	606	,7824726	666	,8234742
427	,6304279	487	,6875290	547	,7379873	607	,7831887	667	,8241258
428	,6314438	488	,6884198	548	,7387806	608	,7839036	668	,8247765
429	,6324573	489	,6893089	549	,7395723	609	,7846173	669	,8254261
430	,6334685	490	,6901961	550	,7403627	610	,7853298	670	,8260748
431	,6344773	491	,6910815	551	,7411516	611	,7860412	671	,8267225
432	,6354837	492	,6919651	552	,7419391	612	,7867514	672	,8273693
433	,6364879	493	,6928469	553	,7427251	613	,7874605	673	,8280151
434	,6374897	494	,6937269	554	,7435098	614	,7881684	674	,8286599
435	,6384893	495	,6946052	555	,7442930	615	,7888751	675	,8293038
436	,6394865	496	,6954817	556	,7450748	616	,7895807	676	,8299467
437	,6404814	497	,6963564	557	,7458552	617	,7902852	677	,8305887
438	,6414741	498	,6972293	558	,7466342	618	,7909885	678	,8312297
439	,6424645	499	,6981005	559	,7474118	619	,7916906	679	,8318698
440	,6434527	500	,6989700	560	,7481880	620	,7923917	680	,8325089
441	,6444386	501	,6998377	561	,7489629	621	,7930916	681	,8331471
442	,6454223	502	,7007037	562	,7497363	622	,7937904	682	,8337844
443	,6464037	503	,7015680	563	,7505084	623	,7944880	683	,8344207
444	,6473830	504	,7024305	564	,7512791	624	,7951846	684	,8350561
445	,6483600	505	,7032914	565	,7520484	625	,7958800	685	,8356906
446	,6493349	506	,7041505	566	,7528164	626	,7965743	686	,8363241
447	,6503075	507	,7050080	567	,7535831	627	,7972675	687	,8369567
448	,6512780	508	,7058637	568	,7543483	628	,7979596	688	,8375884
449	,6522463	509	,7067178	569	,7551123	629	,7986506	689	,8382192
450	,6532125	510	,7075702	570	,7558749	630	,7993405	690	,8388491
451	,6541765	511	,7084209	571	,7566361	631	,8000294	691	,8394780
452	,6551384	512	,7092700	572	,7573960	632	,8007171	692	,8401061
453	,6560982	513	,7101174	573	,7581546	633	,8014037	693	,8407332
454	,6570559	514	,7109631	574	,7589119	634	,8020893	694	,8413595
455	,6580114	515	,7118072	575	,7596678	635	,8027737	695	,8419848
456	,6589648	516	,7126497	576	,7604225	636	,8034571	696	,8426092
457	,6599162	517	,7134905	577	,7611758	637	,8041394	697	,8432328
458	,6608655	518	,7143298	578	,7619278	638	,8048207	698	,8438554
459	,6618127	519	,7151674	579	,7626786	639	,8055009	699	,8444772
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700	8450980	760	8808136	820	9138139	880	9444827	940	9731279
701	8457180	761	8813847	821	9143432	881	9449759	941	9735896
702	8463371	762	8819550	822	9148718	882	9454686	942	9740509
703	8469553	763	8825245	823	9153998	883	9459607	943	9745117
704	8475727	764	8830934	824	9159272	884	9464523	944	9749720
705	8481891	765	8836614	825	9164539	885	9469433	945	9754318
706	8488047	766	8842288	826	9169800	886	9474337	946	9758911
707	8494194	767	8847954	827	9175055	887	9479236	947	9763500
708	8500333	768	8853612	828	9180303	888	9484130	948	9768083
709	8506462	769	8859263	829	9185545	889	9489018	949	9772662
710	8512583	770	8864907	830	9190781	890	9493900	950	9777236
711	8518696	771	8870544	831	9196010	891	9498777	951	9781805
712	8524800	772	8876173	832	9201233	892	9503649	952	9786369
713	8530895	773	8881795	833	9206450	893	9508515	953	9790929
714	8536982	774	8887410	834	9211661	894	9513375	954	9795484
715	8543060	775	8893017	835	9216865	895	9518230	955	9800034
716	8549130	776	8898617	836	9222063	896	9523080	956	9804579
717	8555192	777	8904210	837	9227255	897	9527924	957	9809119
718	8561244	778	8909796	838	9232440	898	9532763	958	9813655
719	8567289	779	8915375	839	9237620	899	9537597	959	9818186
720	8573325	780	8920946	840	9242793	900	9542425	960	9822712
721	8579353	781	8926510	841	9247960	901	9547248	961	9827234
722	8585372	782	8932068	842	9253121	902	9552065	962	9831751
723	8591383	783	8937618	843	9258276	903	9556878	963	9836263
724	8597386	784	8943161	844	9263424	904	9561684	964	9840770
725	8603380	785	8948696	845	9268567	905	9566486	965	9845273
726	8609366	786	8954225	846	9273704	906	9571282	966	9849771
727	8615344	787	8959747	847	9278834	907	9576073	967	9854265
728	8621314	788	8965262	848	9283959	908	9580858	968	9858754
729	8627275	789	8970770	849	9289077	909	9585639	969	9863238
730	8633229	790	8976271	850	9294189	910	9590414	970	9867717
731	8639174	791	8981765	851	9299296	911	9595184	971	9872192
732	8645111	792	8987252	852	9304396	912	9599948	972	9876663
733	8651040	793	8992732	853	9309490	913	9604708	973	9881128
734	8656961	794	8998205	854	9314579	914	9609462	974	9885590
735	8662873	795	9003671	855	9319661	915	9614211	975	9890046
736	8668778	796	9009131	856	9324738	916	9618955	976	9894498
737	8674675	797	9014583	857	9329808	917	9623693	977	9898946
738	8680564	798	9020029	858	9334873	918	9628427	978	9903389
739	8686444	799	9025468	859	9339932	919	9633155	979	9907827
740	8692317	800	9030900	860	9344985	920	9637878	980	9912261
741	8698182	801	9036325	861	9350032	921	9642596	981	9916690
742	8704039	802	9041744	862	9355073	922	9647309	982	9921115
743	8709888	803	9047155	863	9360108	923	9652017	983	9925535
744	8715729	804	9052560	864	9365137	924	9656720	984	9929951
745	8721563	805	9057959	865	9370161	925	9661417	985	9934362
746	8727388	806	9063350	866	9375179	926	9666110	986	9938769
747	8733206	807	9068735	867	9380191	927	9670797	987	9943172
748	8739016	808	9074114	868	9385197	928	9675480	988	9947569
749	8744818	809	9079485	869	9390198	929	9680157	989	9951963
750	8750613	810	9084850	870	9395193	930	9684829	990	9956352
751	8756399	811	9090209	871	9400182	931	9689497	991	9960737
752	8762178	812	9095560	872	9405165	932	9694159	992	9965117
753	8767950	813	9100905	873	9410142	933	9698816	993	9969492
754	8773713	814	9106244	874	9415114	934	9703469	994	9973864
755	8779470	815	9111576	875	9420081	935	9708116	995	9978231
756	8785218	816	9116901	876	9425041	936	9712758	996	9982593
757	8790959	817	9122221	877	9429996	937	9717396	997	9986952
758	8796692	818	9127533	878	9434945	938	9722028	998	9991305
759	8802418	819	9132839	879	9439889	939	9726656	999	9995655
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102	86002	90257	94509	98756	03000	07239	11474	15704	19931	24154
103	,01.28372	32587	36797	41003	45205	49403	53598	57788	61974	66155
104	70333	74507	78677	82843	87005	91163	95317	99467	03613	07755
105	,02.11893	16027	20157	24284	28406	32525	36639	40750	44857	48960
106	53059	57154	61245	65333	69416	73496	77572	81644	85713	89777
107	93838	97895	01948	05997	10043	14085	18123	22157	26188	30214
108	,03.34238	38257	42273	46285	50293	54297	58298	62295	66289	70279
109	74265	78248	82226	86202	90173	94141	98106	02066	06023	09977
110	,04.13927	17873	21816	25755	29691	33623	37551	41476	45398	49315
111	53230	57141	61048	64952	68852	72749	76642	80532	84418	88301
112	92180	96056	99929	03798	07663	11525	15384	19239	23091	26939
113	,05.30784	34626	38464	42299	46131	49959	53783	57605	61423	65237
114	69049	72856	76661	80462	84260	88055	91846	95634	99419	03200
115	,06.06978	10753	14525	18293	22058	25820	29578	33334	37086	40834
116	44580	48322	52061	55797	59530	63259	66986	70709	74428	78145
117	81859	85569	89276	92980	96681	00379	04073	07765	11453	15138
118	,07.18820	22499	26175	29847	33517	37184	40847	44507	48164	51819
119	55470	59118	62763	66404	70043	73679	77312	80942	84568	88192
120	91812	95430	99045	02656	06265	09870	13473	17073	20669	24263
121	,08.27854	31441	35026	38608	42187	45763	49336	52906	56473	60037
122	63598	67157	70712	74265	77814	81361	84905	88446	91984	95519
123	99051	02581	06107	09631	13152	16670	20185	23697	27206	30713
124	,09.34217	37718	41216	44711	48204	51694	55180	58665	62146	65624
125	69100	72573	76043	79511	82975	86437	89896	93353	96806	00257
126	,10.03705	07151	10594	14034	17471	20905	24337	27766	31193	34616
127	38037	41456	44871	48284	51694	55102	58507	61909	65309	68705
128	72100	75491	78880	82267	85650	89031	92410	95785	99159	02529
129	,11.05897	09262	12625	15985	19343	22698	26050	29400	32747	36092
130	39434	42773	46110	49444	52776	56105	59432	62756	66077	69396
131	72713	76027	79338	82647	85954	89258	92559	95858	99154	02448
132	,12.05739	09028	12315	15598	18880	22159	25435	28709	31981	35250
133	38516	41781	45042	48301	51558	54813	58065	61314	64561	67806
134	71048	74288	77525	80760	83993	87223	90451	93676	96899	00119
135	,13.03338	06553	09767	12978	16187	19393	22597	25798	28998	32195
136	35389	38581	41771	44959	48144	51327	54507	57685	60861	64034
137	67206	70375	73541	76705	79867	83027	86184	89339	92492	95643
138	98791	01937	05080	08222	11361	14498	17632	20765	23895	27022
139	,14.30148	33271	36392	39511	42628	45742	48854	51964	55072	58177
140	61280	64381	67480	70577	73671	76763	79853	82941	86027	89110
141	92191	95270	98347	01422	04494	07564	10633	13699	16762	19824
142	,15.22883	25941	28996	32049	35100	38149	41195	44240	47282	50322
143	53360	56396	59430	62462	65492	68519	71544	74568	77589	80608
144	83625	86640	89653	92663	95672	98678	01683	04685	07686	10684
145	,16.13680	16674	19666	22656	25644	28630	31614	34596	37575	40553
146	43529	46502	49474	52443	55411	58376	61340	64301	67261	70218
147	73173	76127	79078	82027	84975	87920	90864	93805	96744	99682
148	,17.02617	05551	08482	11412	14339	17265	20188	23110	26029	28947
149	31862	34776	37688	40598	43506	46412	49316	52218	55118	58016
150	60913	63807	66699	69590	72478	75365	78250	81133	84013	86892
151	89769	92645	95518	98389	01259	04126	06992	09856	12718	15578
152	,18.18436	21292	24147	26999	29850	32698	35545	38390	41234	44075
153	46914	49752	52588	55422	58254	61084	63912	66739	69563	72386
154	75207	78026	80844	83659	86473	89285	92095	94903	97710	00514
155	,19.03317	06118	08917	11715	14510	17304	20096	22886	25675	28461
156	31246	34029	36810	39590	42367	45143	47918	50690	53461	56229
157	58997	61762	64525	67287	70047	72806	75562	78317	81070	83821
158	86571	89319	92065	94809	97552	00293	03032	05769	08505	11239
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161	68259	70955	73650	76344	79035	81725	84414	87100	89785	92468
162	95150	97830	00508	03185	05860	08534	11205	13876	16544	19211
163	21.21876	24540	27202	29862	32521	35178	37833	40487	43139	45790
164	48438	51086	53732	56376	59018	61659	64298	66936	69572	72207
165	74839	77471	80100	82729	85355	87980	90603	93225	95845	98464
166	22.01081	03696	06310	08922	11533	14142	16750	19356	21960	24563
167	27165	29764	32363	34959	37555	40148	42740	45331	47920	50507
168	53093	55677	58260	60841	63421	65999	68576	71151	73724	76296
169	78867	81436	84004	86570	89134	91697	94258	96818	99377	01934
170	23.04489	07043	09596	12146	14696	17244	19790	22335	24879	27421
171	29961	32500	35038	37574	40108	42641	45173	47703	50232	52759
172	55284	57809	60331	62853	65373	67891	70408	72923	75437	77950
173	80461	82971	85479	87986	90491	92995	95497	97998	00498	02996
174	24.05492	07988	10482	12974	15465	17954	20442	22929	25414	27898
175	30380	32861	35341	37819	40296	42771	45245	47718	50189	52658
176	55127	57594	60059	62523	64986	67447	69907	72365	74823	77278
177	79733	82186	84637	87087	89536	91984	94430	96874	99318	01759
178	25.04200	06639	09077	11513	13949	16382	18815	21246	23675	26103
179	28530	30956	33380	35803	38224	40645	43063	45481	47897	50312
180	52725	55137	57548	59957	62365	64772	67177	69582	71984	74386
181	76786	79185	81582	83978	86373	88766	91158	93549	95939	98327
182	26.00714	03099	05484	07867	10248	12629	15008	17385	19762	22137
183	24511	26883	29255	31625	33993	36361	38727	41092	43455	45817
184	48178	50538	52896	55253	57609	59964	62317	64669	67020	69369
185	71717	74064	76410	78754	81097	83439	85780	88119	90457	92794
186	95129	97464	99797	02129	04459	06788	09116	11443	13769	16093
187	27.18416	20738	23058	25378	27696	30013	32328	34643	36956	39268
188	41578	43888	46196	48503	50809	53114	55417	57719	60020	62320
189	64618	66915	69211	71506	73800	76092	78383	80673	82962	85250
190	87536	89821	92105	94388	96669	98950	01229	03507	05784	08059
191	28.10334	12607	14879	17150	19419	21688	23955	26221	28486	30750
192	33012	35274	37534	39793	42051	44307	46563	48817	51070	53322
193	55573	57823	60071	62319	64565	66810	69054	71296	73538	75778
194	78017	80255	82492	84728	86963	89196	91428	93660	95890	98118
195	29.00346	02573	04798	07022	09246	11468	13689	15908	18127	20344
196	22561	24776	26990	29203	31415	33626	35835	38044	40251	42457
197	44662	46866	49069	51271	53471	55671	57869	60067	62263	64458
198	66652	68845	71037	73227	75417	77605	79792	81979	84164	86348
199	88531	90713	92893	95073	97252	99429	01605	03781	05955	08128
200	30.10300	12471	14641	16809	18977	21144	23309	25474	27637	29799
201	31961	34121	36280	38438	40595	42751	44905	47059	49212	51363
202	53514	55663	57812	59959	62105	64250	66394	68537	70680	72820
203	74960	77099	79237	81374	83509	85644	87778	89910	92042	94172
204	96302	98430	00557	02684	04809	06933	09056	11178	13300	15420
205	31.17539	19657	21774	23889	26004	28118	30231	32343	34454	36563
206	38672	40780	42887	44992	47097	49201	51303	53405	55505	57605
207	59703	61801	63898	65993	68088	70181	72273	74365	76455	78545
208	80633	82721	84807	86893	88977	91061	93143	95224	97305	99384
209	32.01463	03540	05617	07692	09767	11840	13913	15984	18055	20124
210	22193	24261	26327	28393	30457	32521	34584	36645	38706	40766
211	42825	44882	46939	48995	51050	53104	55157	57209	59260	61310
212	63359	65407	67454	69500	71545	73589	75633	77675	79716	81757
213	83796	85834	87872	89909	91944	93979	96012	98045	00077	02108
214	33.04138	06167	08195	10222	12248	14273	16297	18320	20343	22364
215	24385	26404	28423	30440	32457	34473	36488	38501	40514	42526
216	44538	46548	48557	50565	52573	54579	56585	58589	60593	62596
217	64597	66598	68598	70597	72595	74593	76589	78584	80579	82572
218	84565	86557	88547	90537	92526	94514	96502	98488	00473	02458
219	34.04441	06424	08405	10386	12366	14345	16323	18301	20277	22252

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220	34.24227	26200	28173	30145	32116	34086	36055	38023	39991	41957
221	43923	45887	47851	49814	51776	53737	55698	57657	59615	61573
222	63530	65486	67441	69395	71348	73300	75252	77202	79152	81101
223	83049	84996	86942	88887	90832	92775	94718	96660	98601	00541
224	35.02480	04419	06356	08293	10229	12163	14098	16031	17963	19895
225	21825	23755	25684	27612	29539	31465	33391	35316	37239	39162
226	41084	43006	44926	46846	48764	50682	52599	54515	56431	58345
227	60259	62171	64083	65994	67905	69814	71723	73630	75537	77443
228	79348	81253	83156	85059	86961	88862	90762	92662	94560	96458
229	98355	00251	02146	04041	05934	07827	09719	11610	13500	15390
230	36.17278	19166	21053	22939	24825	26709	28593	30476	32358	34239
231	36120	37999	39878	41756	43634	45510	47386	49260	51134	53007
232	54880	56751	58622	60492	62361	64230	66097	67964	69830	71695
233	73559	75423	77285	79147	81009	82869	84728	86587	88445	90302
234	92159	94014	95869	97723	99576	01428	03280	05131	06981	08830
235	37.10679	12526	14373	16219	18065	19909	21753	23596	25438	27279
236	29120	30960	32799	34637	36475	38311	40147	41983	43817	45651
237	47483	49316	51147	52977	54807	56636	58464	60292	62119	63944
238	65770	67594	69418	71240	73063	74884	76704	78524	80343	82161
239	83979	85796	87612	89427	91241	93055	94868	96680	98492	00302
240	38.02112	03922	05730	07538	09345	11151	12956	14761	16565	18368
241	20170	21972	23773	25573	27373	29171	30969	32767	34563	36359
242	38154	39948	41741	43534	45326	47117	48908	50698	52487	54275
243	56063	57850	59636	61421	63206	64990	66773	68555	70337	72118
244	73898	75678	77457	79235	81012	82789	84565	86340	88114	89888
245	91661	93433	95205	96975	98746	00515	02284	04052	05819	07585
246	39.09351	11116	12880	14644	16407	18169	19931	21691	23452	25211
247	26970	28727	30485	32241	33997	35752	37506	39260	41013	42765
248	44517	46268	48018	49767	51516	53264	55011	56758	58504	60249
249	61993	63737	65480	67223	68964	70705	72446	74185	75924	77663
250	79400	81137	82873	84608	86343	88077	89811	91543	93275	95007
251	96737	98467	00196	01925	03653	05380	07106	08832	10557	12282
252	40.14005	15728	17451	19173	20894	22614	24333	26052	27771	29488
253	31205	32921	34637	36352	38076	39780	41492	43205	44916	46627
254	48337	50047	51755	53464	55171	56878	58584	60279	61994	63698
255	65402	67105	68807	70508	72209	73909	75608	77307	79005	80703
256	82400	84096	85791	87486	89180	90874	92567	94259	95950	97641
257	99331	01021	02710	04398	06085	07772	09459	11144	12829	14513
258	41.16197	17880	19562	21244	22925	24605	26285	27964	29643	31321
259	32998	34674	36350	38025	39700	41374	43047	44719	46391	48063
260	49733	51404	53073	54742	56410	58077	59744	61410	63076	64741
261	66405	68069	69732	71394	73056	74717	76377	78037	79696	81355
262	83013	84670	86327	87983	89638	91293	92947	94601	96254	97906
263	99557	01208	02859	04509	06158	07806	09454	11101	12748	14394
264	42.16039	17684	19328	20972	22615	24257	25898	27539	29180	30820
265	32459	34097	35735	37372	39009	40645	42281	43916	45550	47183
266	48816	50449	52081	53712	55342	56972	58601	60230	61858	63486
267	65113	66739	68365	69990	71614	73238	74861	76484	78106	79727
268	81348	82968	84588	86207	87825	89443	91060	92677	94293	95908
269	97523	99137	00751	02364	03976	05588	07199	08809	10419	12029
270	43.13638	15246	16853	18460	20067	21672	23278	24883	26487	28090
271	29693	31295	32897	34498	36098	37698	39298	40896	42495	44092
272	45689	47285	48881	50476	52071	53665	55259	56851	58444	60035
273	61626	63217	64807	66396	67985	69573	71161	72748	74334	75920
274	77506	79090	80675	82258	83841	85423	87005	88587	90167	91747
275	93327	94906	96484	98062	99639	01216	02792	04368	05943	07517
276	44.09091	10664	12237	13809	15380	16951	18522	20092	21661	23230
277	24798	26365	27932	29499	31065	32630	34195	35759	37322	38885
278	40448	42010	43571	45132	46692	48251	49811	51370	52928	54485
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280	44.71580	73131	74681	76231	77780	79329	80877	82424	83971	85517
281	87063	88608	90153	91697	93241	94784	96327	97868	99410	00951
282	45.02491	04031	05570	07109	08647	10185	11722	13258	14794	16329
283	17864	19399	20932	22466	23998	25531	27062	28593	30124	31654
284	33183	34712	36241	37769	39296	40823	42349	43875	45400	46924
285	48449	49972	51495	53018	54540	56061	57582	59102	60622	62142
286	63660	65179	66696	68213	69730	71246	72762	74277	75791	77305
287	78819	80332	81844	83356	84868	86378	87889	89399	90908	92417
288	93925	95433	96940	98446	99953	01458	02963	04468	05972	07475
289	46.08978	10481	11983	13484	14985	16486	17986	19485	20984	22482
290	23980	25477	26974	28470	29966	31461	32956	34450	35944	37437
291	38930	40422	41914	43405	44895	46386	47875	49364	50853	52341
292	53829	55316	56802	58288	59774	61259	62743	64227	65711	67194
293	68676	70158	71640	73121	74601	76081	77561	79039	80518	81996
294	83473	84950	86427	87903	89378	90853	92327	93801	95275	96748
295	98220	99692	01164	02634	04105	05575	07044	08513	09982	11450
296	47.12917	14384	15851	17317	18782	20247	21711	23175	24639	26102
297	27564	29027	30488	31949	33410	34870	36329	37788	39247	40705
298	42163	43620	45076	46533	47988	49443	50898	52352	53806	55259
299	56712	58164	59616	61067	62518	63968	65418	66867	68316	69765
300	71213	72660	74107	75553	76999	78445	79890	81334	82778	84222
301	85665	87108	88550	89991	91432	92873	94313	95753	97192	98631
302	48.00069	01507	02945	04381	05818	07254	08689	10124	11559	12993
303	14426	15859	17292	18724	20156	21587	23018	24448	25878	27307
304	28736	30164	31592	33020	34446	35873	37299	38725	40150	41574
305	42998	44422	45845	47268	48690	50112	51533	52954	54375	55795
306	57214	58633	60052	61470	62888	64305	65722	67138	68554	69969
307	71384	72798	74212	75626	77039	78451	79863	81275	82686	84097
308	85507	86917	88326	89735	91144	92552	93959	95366	96773	98179
309	99585	00990	02395	03799	05203	06607	08010	09412	10814	12216
310	49.13617	15018	16418	17818	19217	20616	22015	23413	24810	26207
311	27604	29000	30396	31791	33186	34581	35974	37368	38761	40154
312	41546	42938	44329	45720	47110	48500	49890	51279	52667	54056
313	55443	56831	58218	59604	60990	62375	63761	65145	66529	67913
314	69296	70679	72062	73444	74825	76206	77587	78967	80347	81727
315	83106	84484	85862	87240	88617	89994	91370	92746	94121	95496
316	96871	98245	99619	00992	02365	03737	05109	06481	07852	09222
317	50.10593	11962	13332	14701	16069	17437	18805	20172	21539	22905
318	24271	25637	27002	28366	29731	31094	32458	33821	35183	36545
319	37907	39268	40629	41989	43349	44709	46068	47426	48785	50142
320	51500	52857	54213	55569	56925	58280	59635	60990	62344	63697
321	65050	66403	67755	69107	70459	71810	73160	74511	75860	77210
322	78559	79907	81255	82603	83950	85297	86644	87990	89335	90680
323	92025	93370	94714	96057	97400	98743	00085	01427	02768	04109
324	51.05450	06790	08130	09469	10808	12147	13485	14823	16160	17497
325	18834	20170	21505	22841	24175	25510	26844	28178	29511	30844
326	32176	33508	34840	36171	37502	38832	40162	41491	42820	44149
327	45478	46805	48133	49460	50787	52113	53439	54764	56089	57414
328	58738	60062	61386	62709	64031	65354	66676	67997	69318	70639
329	71959	73279	74598	75917	77236	78554	79872	81189	82507	83823
330	85139	86455	87771	89086	90400	91715	93028	94342	95655	96968
331	98280	99592	00903	02214	03525	04835	06145	07455	08764	10073
332	52.11381	12689	13996	15303	16610	17916	19222	20528	21833	23138
333	24442	25746	27050	28353	29656	30958	32260	33562	34863	36164
334	37465	38765	40064	41364	42663	43961	45259	46557	47854	49151
335	50448	51744	53040	54336	55631	56925	58220	59513	60807	62100
336	63393	64685	65977	67269	68560	69851	71141	72431	73721	75010
337	76299	77588	78876	80163	81451	82738	84024	85311	86596	87882
338	89167	90452	91736	93020	94304	95587	96870	98152	99434	00716
339	53.01997	03278	04558	05839	07118	08398	09677	10955	12234	13512
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TABLE XXXII.

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340	53.14789	16066	1734	18619	19896	21171	22446	23721	24996	26270
341	27544	28817	30090	31363	32635	33907	35179	36450	37721	38991
342	40261	41531	42800	44069	45338	46606	47874	49141	50408	51675
343	52941	54207	55473	56738	58003	59267	60532	61795	63059	64322
344	65584	66847	68109	69370	70631	71892	73153	74413	75673	76932
345	78191	79450	80708	81966	83223	84481	85737	86994	88250	89506
346	90761	92016	93271	94525	95779	97032	98286	99538	00791	02043
347	54.03295	04546	05797	07048	08298	09548	10798	12047	13296	14544
348	15792	17040	18288	19535	20781	22028	23274	24519	25765	27010
349	28254	29498	30742	31986	33229	34472	35714	36956	38198	39439
350	40680	41921	43161	44401	45641	46880	48119	49358	50596	51834
351	53071	54308	55545	56781	58018	59253	60489	61724	62958	64193
352	65427	66660	67894	69126	70359	71591	72823	74055	75286	76517
353	77747	78977	80207	81436	82665	83894	85123	86351	87578	88806
354	90033	91259	92486	93712	94937	96162	97387	98612	99836	01060
355	55.02284	03507	04730	05952	07174	08396	09618	10839	12059	13280
356	14500	15720	16939	18158	19377	20595	21813	23031	24248	25465
357	26682	27899	29115	30330	31545	32760	33975	35189	36403	37617
358	38830	40043	41256	42468	43680	44892	46103	47314	48524	49735
359	50944	52154	53363	54572	55781	56989	58197	59404	60612	61818
360	63025	64231	65437	66643	67848	69053	70257	71461	72665	73869
361	75072	76275	77477	78680	79881	81083	82284	83485	84686	85886
362	87086	88285	89484	90683	91882	93080	94278	95476	96673	97870
363	99066	00262	01458	02654	03849	05044	06239	07433	08627	09821
364	56.11014	12207	13399	14592	15784	16975	18167	19358	20548	21739
365	22929	24118	25308	26497	27685	28874	30062	31250	32437	33624
366	34811	35997	37183	38369	39555	40740	41925	43109	44293	45477
367	46661	47844	49027	50209	51392	52573	53755	54936	56117	57298
368	58478	59658	60838	62017	63196	64375	65553	66731	67909	69087
369	70264	71440	72617	73793	74969	76144	77320	78495	79669	80843
370	82017	83191	84364	85537	86710	87882	89054	90226	91397	92568
371	93739	94910	96080	97249	98419	99588	00757	01926	03094	04262
372	57.05429	06597	07764	08930	10097	11263	12429	13594	14759	15924
373	17088	18252	19416	20580	21743	22906	24069	25231	26393	27555
374	28716	29877	31038	32198	33358	34518	35678	36837	37996	39154
375	40313	41471	42628	43786	44943	46099	47256	48412	49568	50723
376	51878	53033	54188	55342	56496	57650	58803	59956	61109	62261
377	63414	64565	65717	66868	68019	69170	70320	71470	72620	73769
378	74918	76067	77215	78363	79511	80659	81806	82953	84100	85246
379	86392	87538	88683	89828	90973	92118	93262	94406	95550	96693
380	97836	98979	00121	01263	02405	03547	04688	05829	06969	08110
381	58.09250	10389	11529	12668	13807	14945	16084	17222	18359	19497
382	20634	21770	22907	24043	25179	26314	27450	28585	29719	30854
383	31988	33122	34255	35388	36521	37654	38786	39918	41050	42181
384	43312	44443	45574	46704	47834	48963	50093	51222	52351	53479
385	54607	55735	56863	57990	59117	60244	61370	62496	63622	64748
386	65873	66998	68123	69247	70371	71495	72618	73742	74865	75987
387	77110	78232	79353	80475	81596	82717	83838	84958	86078	87198
388	88317	89436	90555	91674	92792	93910	95028	96145	97263	98379
389	99496	00612	01728	02844	03959	05075	06189	07304	08418	09532
390	59.10646	11760	12873	13980	15098	16210	17322	18434	19546	20657
391	21768	22878	23988	25098	26208	27318	28427	29536	30644	31753
392	32861	33968	35076	36183	37290	38397	39503	40609	41715	42820
393	43926	45030	46135	47239	48344	49447	50551	51654	52757	53860
394	54962	56064	57166	58268	59369	60470	61571	62671	63771	64871
395	65971	67070	68169	69268	70367	71465	72563	73661	74758	75855
396	76952	78048	79145	80241	81336	82432	83527	84622	85717	86811
397	87905	88999	90092	91186	92279	93371	94464	95556	96648	97739
398	98831	99922	01013	02103	03193	04283	05373	06462	07551	08640
399	60.09729	10817	11905	12993	14081	15168	16255	17341	18428	19514
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Briggs's Logarithms.

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400	60.20600	21686	22771	23856	24941	26025	27109	28193	29277	30361
401	31444	32527	33609	34692	35774	36855	37937	39018	40099	41180
402	42261	43341	44421	45500	46580	47659	48738	49816	50895	51973
403	53050	54128	55205	56282	57359	58435	59512	60587	61663	62739
404	63814	64889	65963	67037	68111	69185	70259	71332	72405	73478
405	74550	75622	76694	77766	78837	79909	80979	82050	83120	84191
406	85260	86330	87399	88468	89537	90605	91674	92742	93809	94877
407	95944	97011	98078	99144	00210	01276	02342	03407	04472	05537
408	61.06602	07666	08730	09794	10857	11921	12984	14046	15109	16171
409	17233	18295	19356	20417	21478	22539	23599	24660	25720	26779
410	27839	28898	29957	31015	32074	33132	34189	35247	36304	37361
411	38418	39475	40531	41587	42643	43698	44754	45809	46863	47918
412	48972	50026	51080	52133	53187	54240	55292	56345	57397	58449
413	59501	60552	61603	62654	63705	64755	65805	66855	67905	68954
414	70003	71052	72101	73149	74197	75245	76293	77340	78387	79434
415	80481	81527	82573	83619	84665	85710	86755	87800	88845	89889
416	90933	91977	93021	94064	95107	96150	97193	98235	99277	00319
417	62.01361	02402	03443	04484	05524	06565	07605	08645	09684	10724
418	11763	12802	13840	14879	15917	16955	17992	19030	20067	21104
419	22140	23177	24213	25249	26284	27320	28355	29390	30424	31459
420	32493	33527	34560	35594	36627	37660	38693	39725	40757	41789
421	42821	43852	44884	45915	46945	47976	49006	50036	51066	52095
422	53125	54154	55182	56211	57239	58267	59295	60322	61350	62377
423	63404	64430	65457	66483	67509	68534	69560	70585	71610	72634
424	73659	74683	75707	76730	77754	78777	79800	80823	81845	82867
425	83889	84911	85933	86954	87975	88996	90016	91037	92057	93076
426	94096	95115	96134	97153	98172	99190	00209	01226	02244	03262
427	63.04279	05296	06312	07329	08345	09361	10377	11393	12408	13423
428	14438	15452	16467	17481	18495	19508	20522	21535	22548	23560
429	24573	25585	26597	27609	28620	29632	30643	31654	32664	33674
430	34685	35694	36704	37713	38723	39732	40740	41749	42757	43765
431	44773	45780	46788	47795	48801	49808	50814	51820	52826	53832
432	54837	55843	56848	57852	58857	59861	60865	61869	62873	63876
433	64879	65882	66884	67887	68889	69891	70893	71894	72895	73897
434	74897	75898	76898	77898	78898	79898	80897	81896	82895	83894

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435	638.4893	5891	6889	7887	8884	9882	0879	1876	2872	3869	998
436	639.4865	5861	6857	7852	8847	9842	0837	1832	2826	3820	995
437	640.4814	5808	6802	7795	8788	9781	0773	1765	2758	3749	993
438	641.4741	5733	6724	7715	8705	9696	0686	1676	2666	3656	991
439	642.4645	5634	6623	7612	8601	9589	0577	1565	2552	3540	989
440	643.4527	5514	6500	7487	8473	9459	0445	1431	2416	3401	986
441	644.4386	5371	6355	7339	8323	9307	0291	1274	2257	3240	984
442	645.4223	5205	6187	7169	8151	9133	0114	1095	2076	3057	982
443	646.4037	5018	5998	6977	7957	8936	9915	0894	1873	2851	980
444	647.3830	4808	5786	6763	7741	8718	9695	0671	1648	2624	978
445	648.3600	4576	5552	6527	7502	8477	9452	0426	1401	2375	975
446	649.3349	4322	5296	6269	7242	8215	9187	0160	1132	2104	973
447	650.3075	4047	5018	5989	6960	7930	8901	9871	0841	1811	971
448	651.2780	3749	4719	5687	6656	7624	8593	9561	0528	1496	969
449	652.2463	3431	4397	5364	6331	7297	8263	9229	0195	1160	966
450	653.2125	3090	4055	5019	5984	6948	7912	8876	9839	0802	964
451	654.1765	2728	3691	4653	5616	6578	7539	8501	9462	0423	962
452	655.1384	2345	3306	4266	5226	6186	7145	8105	9064	0023	960
453	656.0982	1941	2899	3857	4815	5773	6730	7688	8645	9602	958
454	657.0559	1515	2471	3427	4383	5339	6294	7250	8205	9159	956
455	658.0114	1068	2023	2977	3930	4884	5837	6790	7743	8696	954
456	9648	0601	1553	2505	3456	4408	5359	6310	7261	8212	952
457	659.9162	0112	1062	2012	2962	3911	4860	5809	6758	7706	950
458	660.8655	9603	0551	1499	2446	3393	4341	5287	6234	7181	947
459	661.8127	9073	0019	0964	1910	2855	3800	4745	5690	6634	945
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460	,662.7578	8522	9466	0410	1353	2296	3239	4182	5125	6067	943
461	,663.7009	7951	8893	9835	0776	1717	2658	3599	4539	5480	941
462	,664.6420	7360	8299	9239	0178	1117	2056	2995	3934	4872	939
463	,665.5810	6748	7686	8623	9560	0497	1434	2371	3307	4244	937
464	,666.5180	6116	7051	7987	8922	9857	0792	1727	2661	3595	935
465	,667.4530	5463	6397	7331	8264	9197	0130	1062	1995	2927	933
466	,668.3859	4791	5723	6654	7585	8516	9447	0378	1308	2239	931
467	,669.3169	4099	5028	5958	6887	7816	8745	9674	0602	1530	929
468	,670.2459	3386	4314	5242	6169	7096	8023	8950	9876	0802	927
469	,671.1728	2654	3580	4506	5431	6356	7281	8206	9130	0054	925
470	,672.0979	1903	2826	3750	4673	5596	6519	7442	8365	9287	923
471	,673.0209	1131	2053	2974	3896	4817	5738	6659	7579	8500	921
472	9420	0340	1260	2179	3099	4018	4937	5856	6775	7693	919
473	,674.8611	9529	0447	1365	2283	3200	4117	5034	5951	6867	917
474	,675.7783	8700	9615	0531	1447	2362	3277	4192	5107	6022	915
475	,676.6936	7850	8764	9678	0592	1505	2418	3332	4244	5157	913
476	,677.6070	6982	7894	8806	9718	0629	1540	2452	3362	4273	911
477	,678.5184	6094	7004	7914	8824	9734	0643	1552	2461	3370	910
478	,679.4279	5187	6096	7004	7912	8819	9727	0634	1541	2448	908
479	,680.3355	4262	5168	6074	6980	7886	8792	9697	0602	1507	906
480	,681.2412	3317	4222	5126	6030	6934	7838	8741	9645	0548	904
481	,682.1451	2354	3256	4159	5061	5963	6865	7766	8668	9569	902
482	,683.0470	1371	2272	3173	4073	4973	5873	6773	7673	8572	900
483	9471	0370	1269	2168	3066	3965	4863	5761	6659	7556	898
484	,684.8454	9351	0248	1145	2041	2938	3834	4730	5626	6522	896
485	,685.7417	8313	9208	0103	0998	1892	2787	3681	4575	5469	895
486	,686.6363	7256	8150	9043	9936	0828	1721	2613	3506	4398	893
487	,687.5290	6181	7073	7964	8855	9746	0637	1528	2418	3308	891
488	,688.4198	5088	5978	6867	7757	8646	9535	0423	1312	2200	889
489	,689.3089	3977	4864	5752	6640	7527	8414	9301	0188	1074	887
490	,690.1961	2847	3733	4619	5505	6390	7275	8161	9046	9930	885
491	,691.0815	1699	2584	3468	4352	5235	6119	7002	7885	8768	884
492	9651	0534	1416	2298	3180	4062	4944	5826	6707	7588	882
493	,692.8469	9350	0231	1111	1991	2872	3752	4631	5511	6390	880
494	,693.7269	8149	9027	9906	0785	1663	2541	3419	4297	5175	878
495	,694.6052	6929	7806	8683	9560	0437	1313	2189	3065	3941	877
496	,695.4817	5692	6568	7443	8318	9193	0067	0942	1816	2690	875
497	,696.3564	4438	5311	6185	7058	7931	8804	9676	0549	1421	873
498	,697.2293	3165	4037	4909	5780	6652	7523	8394	9264	0135	872
499	,698.1005	1876	2746	3616	4485	5355	6224	7093	7963	8831	870
500	9700	0569	1437	2305	3173	4041	4908	5776	6643	7510	868
501	,699.8377	9244	0111	0977	1843	2709	3575	4441	5307	6172	866
502	,700.7037	7902	8767	9632	0496	1361	2225	3089	3953	4816	864
503	,701.5680	6543	7406	8269	9132	9995	0857	1720	2582	3444	863
504	,702.4305	5167	6028	6890	7751	8612	9472	0333	1193	2054	861
505	,703.2914	3774	4633	5493	6352	7212	8071	8930	9788	0647	860
506	,704.1505	2363	3221	4079	4937	5794	6652	7509	8366	9223	858
507	,705.0080	0936	1792	2649	3505	4360	5216	6072	6927	7782	856
508	8637	9492	0347	1201	2055	2910	3764	4617	5471	6325	854
509	,706.7178	8031	8884	9737	0589	1442	2294	3146	3998	4850	852
510	,707.5702	6553	7405	8256	9107	9957	0808	1659	2509	3359	851
511	,708.4209	5059	5908	6758	7607	8456	9305	0154	1003	1851	849
512	,709.2700	3548	4396	5244	6091	6939	7786	8633	9480	0327	847
513	,710.1174	2020	2866	3713	4559	5404	6250	7096	7941	8786	846
514	9631	0476	1321	2165	3010	3854	4698	5542	6385	7229	844
515	,711.8072	8915	9759	0601	1444	2287	3129	3971	4813	5655	843
516	,712.6497	7339	8180	9021	9862	0703	1544	2385	3225	4065	841
517	,713.4905	5745	6585	7425	8264	9104	9943	0782	1620	2459	839
518	,714.3298	4136	4974	5812	6650	7488	8325	9162	0000	0837	838
519	,715.1674	2510	3347	4183	5019	5856	6691	7527	8363	9198	836
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520	.716 0033	0869	1703	2538	3373	4207	5042	5876	6710	7544	835
521	.8377	9211	0044	0877	1710	2543	3376	4208	5041	5873	833
522	.717.6705	7537	8369	9200	0032	0863	1694	2525	3356	4186	831
523	.718.5017	5847	6677	7507	8337	9167	9996	0826	1655	2484	830
524	.719.3313	4142	4970	5799	6627	7455	8283	9111	9938	0766	828
525	.720.1593	2420	3247	4074	4901	5727	6554	7380	8206	9032	826
526	.9857	0683	1508	2334	3159	3984	4809	5633	6458	7282	825
527	.721.8106	8930	9754	0578	1401	2225	3048	3871	4694	5517	823
528	.722.6339	7162	7984	8806	9628	0450	1272	2093	2914	3736	822
529	.723.4557	5378	6198	7019	7839	8660	9480	0300	1120	1939	820
530	.724.2759	3578	4397	5216	6035	6854	7672	8491	9309	0127	818
531	.725.0945	1763	2581	3398	4216	5033	5850	6667	7483	8300	817
532	.9116	9933	0749	1565	2380	3196	4012	4827	5642	6457	815
533	.726.7272	8087	8901	9716	0530	1344	2158	2972	3786	4599	814
534	.727.5413	6226	7039	7852	8664	9477	0290	1102	1914	2726	812
535	.728.3538	4350	5161	5972	6784	7595	8406	9216	0027	0838	811
536	.729.1648	2458	3268	4078	4888	5697	6507	7316	8125	8934	809
537	.9743	0552	1360	2168	2977	3785	4593	5400	6208	7015	808
538	.730.7823	8630	9437	0244	1051	1857	2663	3470	4276	5082	806
539	.731.5888	6693	7499	8304	9109	9914	0719	1524	2329	3133	805
540	.732.3938	4742	5546	6350	7153	7957	8760	9564	0367	1170	804
541	.733.1973	2775	3578	4380	5183	5985	6787	7588	8390	9192	802
542	.9993	0794	1595	2396	3197	3997	4798	5598	6398	7198	801
543	.734.7998	8798	9598	0397	1196	1995	2794	3593	4392	5191	799
544	.735.5989	6787	7585	8383	9181	9979	0776	1574	2371	3168	798
545	.736.3965	4762	5558	6355	7151	7948	8744	9540	0335	1131	796
546	.737.1926	2722	3517	4312	5107	5902	6696	7491	8285	9079	795
547	.9873	0667	1461	2254	3048	3841	4634	5427	6220	7013	793
548	.738.7806	8598	9390	0182	0974	1766	2558	3350	4141	4932	792
549	.739.5723	6514	7305	8096	8887	9677	0467	1257	2047	2837	791
550	.740.3627	4416	5206	5995	6784	7573	8362	9151	9939	0728	789
551	.741.1516	2304	3092	3880	4668	5455	6243	7030	7817	8604	788
552	.9391	0177	0964	1750	2537	3323	4109	4895	5680	6466	786
553	.742.7251	8037	8822	9607	0392	1176	1961	2745	3530	4314	785
554	.743.5098	5882	6665	7449	8232	9016	9799	0582	1365	2147	783
555	.744.2930	3712	4495	5277	6059	6841	7622	8404	9185	9967	782
556	.745.0748	1529	2310	3091	3871	4652	5432	6212	6992	7772	781
557	.8552	9332	0111	0890	1670	2449	3228	4006	4785	5564	779
558	.746.6342	7120	7898	8676	9454	0232	1009	1787	2564	3341	778
559	.747.4118	4895	5672	6448	7225	8001	8777	9553	0329	1105	776
560	.748.1880	2656	3431	4206	4981	5756	6531	7306	8080	8854	775
561	.9629	0403	1177	1950	2724	3498	4271	5044	5817	6590	774
562	.749.7363	8136	8908	9681	0453	1225	1997	2769	3541	4312	772
563	.750.5084	5855	6626	7398	8168	8939	9710	0480	1251	2021	771
564	.751.2791	3561	4331	5101	5870	6639	7409	8178	8947	9716	770
565	.752.0484	1253	2022	2790	3558	4326	5094	5862	6629	7397	768
566	.8164	8932	9699	0466	1232	1999	2766	3532	4298	5065	767
567	.753.5831	6596	7362	8128	8893	9659	0424	1189	1954	2719	766
568	.754.3483	4248	5012	5777	6541	7305	8069	8832	9596	0359	764
569	.755.1123	1886	2649	3412	4175	4937	5700	6462	7224	7987	762
570	.8749	9510	0272	1034	1795	2556	3318	4079	4840	5600	761
571	.756.6361	7122	7882	8642	9402	0162	0922	1682	2442	3201	760
572	.757.3960	4719	5479	6237	6996	7755	8513	9272	0030	0788	759
573	.758.1546	2304	3062	3819	4577	5334	6091	6848	7605	8362	757
574	.9119	9875	0632	1388	2144	2900	3656	4412	5168	5923	756
575	.759.6678	7434	8189	8944	9699	0453	1208	1962	2717	3471	755
576	.760.4225	4979	5733	6486	7240	7993	8746	9500	0253	1005	753
577	.761.1758	2511	3263	4016	4768	5520	6272	7024	7775	8527	752
578	.9278	0030	0781	1532	2283	3034	3784	4535	5285	6035	751
579	.762.6786	7536	8286	9035	9785	0534	1284	2033	2782	3531	749
N ^o .	0	1	2	3	4	5	6	7	8	9	Dif

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580	,763.4280	5029	5777	6526	7274	8022	8770	9518	0266	1014	748
581	,764.1761	2509	3256	4003	4750	5497	6244	6991	7737	8484	747
582	9230	9976	0722	1468	2214	2959	3705	4450	5195	5941	746
583	,765.6686	7430	8175	8920	9664	0409	1153	1897	2641	3385	744
584	,766.4128	4872	5616	6359	7102	7845	8588	9331	0074	0816	743
585	,767.1559	2301	3043	3785	4527	5269	6011	6752	7494	8235	742
586	8976	9717	0458	1199	1940	2680	3421	4161	4901	5641	741
587	,768.6381	7121	7860	8600	9339	0079	0818	1557	2296	3035	739
588	,769.3773	4512	5250	5988	6727	7465	8203	8940	9678	0416	738
589	,770.1153	1890	2627	3364	4101	4838	5575	6311	7048	7784	737
590	8520	9256	9992	0728	1463	2199	2934	3670	4405	5140	736
591	,771.5875	6610	7344	8079	8813	9547	0282	1016	1750	2483	735
592	,772.3217	3951	4684	5417	6150	6884	7616	8349	9082	9815	733
593	,773.0547	1279	2011	2743	3475	4207	4939	5670	6402	7133	732
594	7864	8596	9326	0057	0788	1519	2249	2979	3710	4440	731
595	,774.5170	5900	6629	7359	8088	8818	9547	0276	1005	1734	729
596	,775.2463	3191	3920	4648	5376	6104	6832	7560	8288	9016	728
597	9743	0471	1198	1925	2652	3379	4106	4833	5559	6286	727
598	,776.7012	7738	8464	9190	9916	0642	1367	2093	2818	3543	726
599	,777.4268	4993	5718	6443	7167	7892	8616	9340	0065	0789	724
600	,778.1513	2236	2960	3683	4407	5130	5853	6576	7299	8022	723
601	8745	9467	0190	0912	1634	2356	3078	3800	4522	5243	722
602	,779.5965	6686	7408	8129	8850	9571	0291	1012	1732	2453	721
603	,780.3173	3893	4613	5333	6053	6773	7492	8212	8931	9650	720
604	,781.0369	1088	1807	2526	3245	3963	4681	5400	6118	6836	719
605	7554	8272	8989	9707	0424	1141	1859	2576	3293	4010	717
606	,782.4726	5443	6159	6876	7592	8308	9024	9740	0456	1171	716
607	,783.1887	2602	3318	4033	4748	5463	6178	6892	7607	8321	715
608	9036	9750	0464	1178	1892	2606	3319	4033	4746	5460	714
609	,784.6173	6886	7599	8312	9024	9737	0450	1162	1874	2586	713
610	,785.3298	4010	4722	5434	6145	6857	7568	8279	8990	9701	712
611	,786.0412	1123	1833	2544	3254	3965	4675	5385	6095	6805	710
612	7514	8224	8933	9643	0352	1061	1770	2479	3188	3896	709
613	,787.4605	5313	6021	6730	7438	8146	8854	9561	0269	0976	708
614	,788.1684	2391	3098	3805	4512	5219	5926	6632	7339	8045	707
615	8751	9457	0163	0869	1575	2281	2986	3692	4397	5102	706
616	,789.5807	6512	7217	7922	8626	9331	0035	0739	1444	2148	705
617	,790.2852	3555	4259	4963	5666	6370	7073	7776	8479	9182	703
618	9885	0587	1290	1992	2695	3397	4099	4801	5503	6205	702
619	,791.6906	7608	8309	9011	9712	0413	1114	1815	2516	3216	701
620	,792.3917	4617	5318	6018	6718	7418	8118	8817	9517	0217	700
621	,793.0916	1615	2314	3014	3712	4411	5110	5809	6507	7206	699
622	7904	8602	9300	9998	0696	1394	2091	2789	3486	4183	698
623	,794.4880	5578	6274	6971	7668	8365	9061	9757	0454	1150	696
624	,795.1846	2542	3238	3933	4629	5324	6020	6715	7410	8105	695
625	8800	9495	0190	0884	1579	2273	2967	3662	4356	5050	694
626	,796.5743	6437	7131	7824	8517	9211	9904	0597	1290	1983	693
627	,797.2675	3368	4060	4753	5445	6137	6829	7521	8213	8905	692
628	9596	0288	0979	1671	2362	3053	3744	4435	5125	5816	691
629	,798.6506	7197	7887	8577	9267	9957	0647	1337	2027	2716	690
630	,799.3405	4095	4784	5473	6162	6851	7540	8228	8917	9605	689
631	,800.0294	0982	1670	2358	3046	3734	4421	5109	5796	6484	688
632	7171	7858	8545	9232	9919	0605	1292	1978	2665	3351	687
633	,801.4037	4723	5409	6095	6781	7466	8152	8837	9522	0208	686
634	,802.0893	1578	2262	2947	3632	4316	5001	5685	6369	7053	684
635	7737	8421	9105	9789	0472	1156	1839	2522	3205	3888	683
636	,803.4571	5254	5937	6619	7302	7984	8666	9348	0031	0712	682
637	,804.1394	2076	2758	3439	4121	4802	5483	6164	6845	7526	681
638	8207	8887	9568	0248	0929	1609	2289	2969	3649	4329	680
639	,805.5009	5688	6368	7047	7726	8405	9085	9764	0442	1121	679
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640	,806.1800	2478	3157	3835	4513	5191	5869	6547	7225	7903	678
641	8580	9258	9935	0612	1290	1967	2644	3320	3997	4674	677
642	,807.5350	6027	6703	7379	8055	8731	9407	0083	0759	1434	676
643	,808.2110	2785	3460	4136	4811	5486	6160	6835	7510	8184	675
644	8859	9533	0207	0881	1555	2229	2903	3577	4250	4924	674
645	,809.5597	6270	6944	7617	8290	8962	9635	0308	0980	1653	673
646	,810.2325	2997	3670	4342	5013	5685	6357	7029	7700	8372	672
647	9043	9714	0385	1056	1727	2398	3068	3739	4409	5080	671
648	,811.5750	6420	7090	7760	8430	9100	9769	0439	1108	1778	670
649	,812.2447	3116	3785	4454	5123	5792	6460	7129	7797	8465	669
650	9134	9802	0470	1138	1805	2473	3141	3808	4475	5143	668
651	,813.5810	6477	7144	7811	8478	9144	9811	0477	1144	1810	667
652	,814.2476	3142	3808	4474	5140	5805	6471	7136	7801	8467	666
653	9132	9797	0462	1127	1791	2456	3120	3785	4449	5113	665
654	,815.5777	6441	7105	7769	8433	9097	9760	0423	1087	1750	664
655	,816.2413	3076	3739	4402	5064	5727	6389	7052	7714	8376	663
656	9038	9700	0362	1024	1686	2347	3009	3670	4331	4993	662
657	,817.5654	6315	6976	7636	8297	8958	9618	0278	0939	1599	660
658	,818.2259	2919	3579	4239	4898	5558	6217	6877	7536	8195	659
659	8854	9513	0172	0831	1489	2148	2806	3465	4123	4781	658
660	,819.5439	6097	6755	7413	8071	8728	9386	0043	0700	1358	658
661	,820.2015	2672	3328	3985	4642	5298	5955	6611	7268	7924	657
662	8580	9236	9892	0548	1203	1859	2514	3170	3825	4480	656
663	,821.5135	5790	6445	7100	7755	8409	9064	9718	0372	1027	655
664	,822.1681	2335	2989	3643	4296	4950	5603	6257	6910	7563	654
665	8216	8869	9522	0175	0828	1481	2133	2786	3438	4090	653
666	,823.4742	5394	6046	6698	7350	8002	8653	9305	9956	0607	652
667	,824.1258	1909	2560	3211	3862	4513	5163	5814	6464	7114	651
668	7765	8415	9065	9715	0364	1014	1664	2313	2963	3612	650
669	,825.4261	4910	5559	6208	6857	7506	8154	8803	9451	0100	649
670	,826.0748	1396	2044	2692	3340	3988	4635	5283	5931	6578	648
671	7225	7872	8519	9166	9813	0460	1107	1753	2400	3046	647
672	,827.3693	4339	4985	5631	6277	6923	7569	8214	8860	9505	646
673	,828.0151	0796	1441	2086	2731	3376	4021	4665	5310	5955	645
674	6599	7243	7887	8532	9176	9820	0463	1107	1751	2394	644
675	,829.3038	3681	4324	4967	5611	6254	6896	7539	8182	8824	643
676	9467	0109	0752	1394	2036	2678	3320	3962	4604	5245	642
677	,830.5887	6528	7169	7811	8452	9093	9734	0375	1016	1656	641
678	,831.2297	2937	3578	4218	4858	5499	6139	6778	7418	8058	640
679	8698	9337	9977	0616	1255	1895	2534	3173	3812	4450	639
680	,832.5089	5728	6366	7005	7643	8281	8919	9558	0195	0833	638
681	,833.1471	2109	2746	3384	4021	4659	5296	5933	6570	7207	637
682	7844	8480	9117	9754	0390	1027	1663	2299	2935	3571	636
683	,834.4207	4843	5479	6114	6750	7385	8021	8656	9291	9926	635
684	,835.0561	1196	1831	2465	3100	3735	4369	5003	5638	6272	635
685	6906	7540	8174	8807	9441	0075	0708	1341	1975	2608	634
686	,836.3241	3874	4507	5140	5773	6405	7038	7670	8303	8935	633
687	9567	0199	0832	1463	2095	2727	3359	3990	4622	5253	632
688	,837.5884	6516	7147	7778	8409	9039	9670	0301	0931	1562	631
689	,838.2192	2822	3453	4083	4713	5343	5973	6602	7232	7861	630
690	8491	9120	9750	0379	1008	1637	2266	2895	3523	4152	629
691	,839.4780	5409	6037	6666	7294	7922	8550	9178	9806	0433	628
692	,840.1061	1688	2316	2943	3571	4198	4825	5452	6079	6706	627
693	7332	7959	8586	9212	9838	0465	1091	1717	2343	2969	626
694	,841.3595	4220	4846	5472	6097	6723	7348	7973	8598	9223	625
695	9848	0473	1098	1722	2347	2971	3596	4220	4844	5468	624
696	,842.6092	6716	7340	7964	8588	9211	9835	0458	1081	1705	624
697	,843.2328	2951	3574	4197	4819	5442	6065	6687	7310	7932	623
698	8554	9176	9798	0420	1042	1664	2286	2907	3529	4150	622
699	,844.4772	5393	6014	6635	7256	7877	8498	9119	9739	0360	621
N ^o .	0	1	2	3	4	5	6	7	8	9	Dif.

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700	,845.0980	1601	2221	2841	3461	4081	4701	5321	5941	6561	620
701	7180	7800	8419	9038	9658	0277	0896	1515	2134	2752	619
702	,846.3371	3990	4608	5227	5845	6463	7081	7700	8318	8935	618
703	9553	0171	0789	1406	2024	2641	3258	3876	4493	5110	618
704	,847.5727	6343	6960	7577	8193	8810	9426	0043	0659	1275	617
705	,848.1891	2507	3123	3739	4355	4970	5586	6201	6817	7432	616
706	8047	8662	9277	9892	0507	1122	1736	2351	2965	3580	615
707	,849.4194	4808	5423	6037	6651	7264	7878	8492	9106	9719	614
708	,850.0333	0946	1559	2172	2786	3399	4011	4624	5237	5850	613
709	6462	7075	7687	8300	8912	9524	0136	0748	1360	1972	612
710	,851.2583	3195	3807	4418	5030	5641	6252	6863	7474	8085	611
711	8696	9307	9917	0528	1139	1749	2359	2970	3580	4190	611
712	,852.4800	5410	6020	6629	7239	7849	8458	9068	9677	0286	610
713	,853.0895	1504	2113	2722	3331	3940	4548	5157	5765	6374	609
714	6982	7590	8198	8807	9414	0022	0630	1238	1845	2453	608
715	,854.3060	3668	4275	4882	5489	6096	6703	7310	7917	8524	607
716	9130	9737	0343	0950	1556	2162	2768	3374	3980	4586	606
717	,855.5192	5797	6403	7008	7614	8219	8824	9429	0035	0640	605
718	,856.1244	1849	2454	3059	3663	4268	4872	5476	6081	6685	604
719	7289	7893	8497	9101	9704	0308	0912	1515	2118	2722	604
720	,857.3325	3928	4531	5134	5737	6340	6943	7545	8148	8750	603
721	9353	9955	0557	1159	1761	2363	2965	3567	4169	4770	602
722	,858.5372	5973	6575	7176	7777	8379	8980	9581	0181	0782	601
723	,859.1383	1984	2584	3185	3785	4385	4986	5586	6186	6786	600
724	7386	7985	8585	9185	9784	0384	0983	1583	2182	2781	600
725	,860.3380	3979	4578	5177	5776	6374	6973	7571	8170	8768	599
726	9366	9964	0562	1160	1758	2356	2954	3552	4149	4747	598
727	,861.5344	5941	6539	7136	7733	8330	8927	9524	0121	0717	597
728	,862.1314	1910	2507	3103	3699	4296	4892	5488	6084	6680	596
729	7275	7871	8467	9062	9658	0253	0848	1443	2039	2634	595
730	,863.3229	3823	4418	5013	5608	6202	6797	7391	7985	8580	595
731	9174	9768	0362	0956	1550	2143	2737	3331	3924	4517	594
732	,864.5111	5704	6297	6890	7483	8076	8669	9262	9855	0447	593
733	,865.1040	1632	2225	2817	3409	4001	4593	5185	5777	6369	592
734	6961	7552	8144	8735	9327	9918	0509	1100	1691	2282	591
735	,866.2873	3464	4055	4646	5236	5827	6417	7008	7598	8188	590
736	8778	9368	9958	0548	1138	1728	2317	2907	3496	4086	590
737	,867.4675	5264	5853	6442	7031	7620	8209	8798	9387	9975	589
738	,868.0564	1152	1740	2329	2917	3505	4093	4681	5269	5857	588
739	6444	7032	7620	8207	8794	9382	9969	0556	1143	1730	587
740	,869.2317	2904	3491	4077	4664	5251	5837	6423	7010	7596	586
741	8182	8768	9354	9940	0526	1112	1697	2283	2868	3454	586
742	,870.4039	4624	5210	5795	6380	6965	7549	8134	8719	9304	585
743	9888	0473	1057	1641	2226	2810	3394	3978	4562	5146	584
744	,871.5729	6313	6897	7480	8064	8647	9230	9814	0397	0980	583
745	,872.1563	2146	2728	3311	3894	4476	5059	5641	6224	6806	582
746	7388	7970	8552	9134	9716	0298	0880	1462	2043	2625	582
747	,873.3206	3787	4369	4950	5531	6112	6693	7274	7855	8435	581
748	9016	9597	0177	0757	1338	1918	2498	3078	3658	4238	580
749	,874.4818	5398	5978	6557	7137	7716	8296	8875	9454	0034	579
750	,875.0613	1192	1771	2349	2928	3507	4086	4664	5243	5821	579
751	6399	6978	7556	8134	8712	9290	9868	0446	1023	1601	578
752	,876.2178	2756	3333	3911	4488	5065	5642	6219	6796	7373	577
753	7950	8526	9103	9680	0256	0833	1409	1985	2561	3137	576
754	,877.3713	4289	4865	5441	6017	6592	7168	7743	8319	8894	576
755	9470	0045	0620	1195	1770	2345	2919	3494	4069	4643	575
756	,878.5218	5792	6367	6941	7515	8089	8663	9237	9811	0385	574
757	,879.0959	1532	2106	2680	3253	3826	4400	4973	5546	6119	573
758	6692	7265	7838	8411	8983	9556	0128	0701	1273	1846	572
759	,880.2418	2990	3562	4134	4706	5278	5850	6421	6993	7564	572
N ^o .	0	1	2	3	4	5	6	7	8	9	Diff

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760	.880.8136	3707	9279	9350	0421	099	1563	2134	2705	3276	571
761	.881.3847	4417	4988	5558	6129	6699	7269	7840	8410	8980	570
762	.9550	0120	0689	1259	1829	2398	2968	3537	4107	4676	569
763	.882.5245	5815	6384	6953	7522	8090	8659	9228	9797	0365	569
764	.883.0934	1502	2070	2639	3207	3775	4343	4911	5479	6047	568
765	.6614	7182	7750	8317	8885	9452	0019	0586	1154	1721	567
766	.884.2288	2855	3421	3988	4555	5122	5688	6255	6821	7387	567
767	.7954	8520	9086	9652	0218	0784	1350	1915	2481	3047	566
768	.885.3612	4178	4743	5308	5874	6439	7004	7569	8134	8699	565
769	.9263	9828	0393	0957	1522	2086	2651	3215	3779	4343	564
770	.886.4907	5471	6035	6599	7163	7726	8290	8854	9417	9980	564
771	.887.0544	1107	1670	2233	2796	3359	3922	4485	5048	5610	563
772	.6173	6736	7298	7860	8423	8985	9547	0109	0671	1233	562
773	.888.1795	2357	2918	3480	4042	4603	5165	5726	6287	6848	561
774	.7410	7971	8532	9093	9653	0214	0775	1336	1896	2457	561
775	.889.301	3577	4138	4698	5258	5818	6378	6938	7498	8058	560
776	.8617	9177	9736	0296	0855	1415	1974	2533	3092	3651	559
777	.890.4210	4769	5328	5887	6445	7004	7563	8121	8679	9238	559
778	.9796	0354	0912	1470	2028	2586	3144	3702	4259	4817	558
779	.891.5375	5932	6489	7047	7604	8161	8718	9275	9832	0389	557
780	.892.0946	1503	2059	2616	3173	3729	4285	4842	5398	5954	556
781	.6510	7066	7622	8178	8734	9290	9846	0401	0957	1512	556
782	.893.2068	2623	3178	3733	4288	4843	5398	5953	6508	7063	555
783	.7618	8172	8727	9281	9836	0390	0944	1498	2053	2607	554
784	.894.3161	3715	4268	4822	5376	5929	6483	7037	7590	8143	554
785	.8697	9250	9803	0356	0909	1462	2015	2568	3120	3673	553
786	.895.4225	4778	5330	5883	6435	6987	7539	8092	8644	9195	552
787	.9747	0299	0851	1403	1954	2506	3057	3608	4160	4711	552
788	.896.5262	5813	6364	6915	7466	8017	8568	9118	9669	0220	551
789	.897.0770	1320	1871	2421	2971	3521	4071	4621	5171	5721	550
790	.6271	6821	7370	7920	8469	9019	956	0117	0667	1216	549
791	.898.1765	2314	2863	3412	3960	4509	5058	5606	6155	6703	549
792	.7252	7800	8348	8897	9445	9993	0541	1089	1636	2184	548
793	.899.2732	3279	3827	4375	4922	5469	6017	6564	7111	7658	547
794	.8205	8752	9299	9846	0392	0939	1486	2032	2579	3125	547
795	.900.3671	4218	4764	5310	5856	6402	6948	7494	8039	8585	546
796	.9131	9676	0222	0767	1313	1858	2403	2948	3493	4038	545
797	.901.4583	5128	5673	6218	6762	7307	7851	8396	8940	9485	544
798	.902.0029	0573	1117	1661	2205	2749	3293	3837	4381	4924	544
799	.5468	6011	6555	7098	7641	8185	872	9271	9814	0357	543
800	.903.0900	1443	1985	2528	3071	3613	4156	4698	524	5783	543
801	.6325	6867	7409	7951	8493	9035	9577	0119	0661	1202	542
802	.904.1744	2285	2827	3368	3909	4450	4992	5533	6074	6615	541
803	.7155	7696	8237	8778	9318	9859	0399	0940	1480	2020	540
804	.905.2560	3101	3641	4181	4721	5260	5800	6340	6880	7419	540
805	.7959	8498	9038	9577	0116	0655	1195	1734	2273	2812	539
806	.906.3350	3889	4428	4967	5505	6044	6582	7121	7659	8197	539
807	.8735	9273	9812	0350	0887	1425	1963	2501	3038	3576	538
808	.907.4114	4651	5188	5726	6263	6800	7337	7874	8411	8948	537
809	.9485	0022	0559	1095	1632	2169	2705	3241	3778	4314	536
810	.908.4850	5386	5922	6458	6994	7530	8066	8602	9137	9673	536
811	.909.0209	0744	1279	1815	2350	2885	3420	3955	4490	5025	535
812	.5560	6095	6630	7165	7699	8234	8768	9303	9837	0371	534
813	.910.0905	1440	1974	2508	3042	3576	4109	4643	5177	5710	534
814	.6244	6778	7311	7844	8378	8911	9444	9977	0510	1043	533
815	.911.1576	2109	2642	3174	3707	4240	4772	5305	5837	6369	533
816	.6902	7434	7966	8498	9030	9562	0094	0626	1157	1689	532
817	.912.222	2752	3284	3815	4346	4878	5409	5940	6471	7002	531
818	.7533	8064	8595	9126	9656	0187	0717	1248	1778	2309	530
819	.913.2839	3369	3899	4430	4960	5490	6019	6549	7079	7609	530
N ^o	0	1	2	3	4	5	6	7	8	9	Dif

N ^o .	0	1	2	3	4	5	6	7	8	9	Dif.
820	.913 8139	8668	9198	9727	0257	0786	1315	1844	2373	2903	529
821	.914 3432	3961	4489	5018	5547	6076	6604	7133	7661	8190	529
822	8718	9246	9775	0303	0831	1359	1887	2415	2943	3471	528
823	.915 3998	4526	5054	5581	6109	6636	7163	7691	8218	8745	527
824	9272	9799	0326	0853	1380	1907	2433	2960	3487	4013	527
825	.916 4539	5066	5592	6118	6645	7171	7697	8223	8749	9275	526
826	9800	0326	0852	1378	1903	2429	2954	3479	4005	4530	526
827	.917 5055	5580	6105	6630	7155	7680	8205	8730	9254	9779	525
828	.918 0303	0828	1352	1877	2401	2925	3449	3973	4497	5021	524
829	5545	6069	6593	7117	7640	8164	8687	9211	9734	0258	524
830	.919 0781	1304	1827	2350	2873	3396	3919	4442	4965	5488	523
831	6010	6533	7055	7578	8100	8623	9145	9667	0189	0711	522
832	.920 1233	1755	2277	2799	3321	3842	4364	4886	5407	5929	522
833	6450	6971	7493	8014	8535	9056	9577	0098	0619	1140	521
834	.921 1661	2181	2702	3222	3743	4263	4784	5304	5824	6345	521
835	6865	7385	7905	8425	8945	9465	9984	0504	1024	1543	520
836	.922 2063	2582	3102	3621	4140	4659	5179	5698	6217	6736	519
837	7255	7773	8292	8811	9330	9848	0367	0885	1404	1922	518
838	.923 2440	2958	3477	3995	4513	5031	5549	6066	6584	7102	518
839	7620	8137	8655	9172	9690	0207	0724	1242	1759	2276	517
840	.924 2793	3310	3827	4344	4860	5377	5894	6410	6927	7444	517
841	7960	8476	8993	9509	0025	0541	1057	1573	2089	2605	516
842	.925 3121	3637	4152	4668	5184	5699	6215	6730	7245	7761	516
843	8276	8791	9306	9821	0336	0851	1366	1880	2395	2910	515
844	.926 3424	3939	4453	4968	5482	5997	6511	7025	7539	8053	514
845	8567	9081	9595	0109	0622	1136	1650	2163	2677	3190	514
846	.927 3704	4217	4730	5243	5757	6270	6783	7296	7808	8321	513
847	8834	9347	9859	0372	0885	1397	1909	2422	2934	3446	512
848	.928 3959	4471	4983	5495	6007	6518	7030	7542	8054	8565	512
849	9077	9588	0100	0611	1123	1634	2145	2656	3167	3678	511
850	.929 4189	4700	5211	5722	6233	6743	7254	7764	8275	8785	511
851	9296	9806	0316	0826	1336	1847	2357	2866	3376	3886	510
852	.930 4396	4906	5415	5925	6434	6944	7453	7963	8472	8981	509
853	9490	9999	0508	1017	1526	2035	2544	3053	3562	4070	509
854	.931 4579	5087	5596	6104	6612	7121	7629	8137	8645	9153	508
855	9661	0169	0677	1185	1692	2200	2708	3215	3723	4230	508
856	.932 4738	5245	5752	6259	6767	7274	7781	8288	8795	9301	507
857	9808	0315	0822	1328	1835	2341	2848	3354	3860	4367	506
858	.933 4873	5379	5885	6391	6897	7403	7909	8415	8920	9426	506
859	9932	0437	0943	1448	1953	2459	2964	3469	3974	4479	505
860	.934 4985	5489	5994	6499	7004	7509	8013	8518	9023	9527	505
861	.935 0032	0536	1040	1544	2049	2553	3057	3561	4065	4569	504
862	5073	5576	6080	6584	7087	7591	8095	8598	9101	9605	503
863	.936 0108	0611	1114	1617	2120	2623	3126	3629	4132	4635	503
864	5137	5640	6143	6645	7148	7650	8152	8655	9157	9659	502
865	.937 0161	0663	1165	1667	2169	2671	3172	3674	4176	4677	502
866	5179	5680	6182	6683	7184	7686	8187	8688	9189	9690	501
867	.938 0191	0692	1193	1693	2194	2695	3195	3696	4196	4697	501
868	5197	5698	6198	6698	7198	7698	8198	8698	9198	9698	500
869	.939 0198	0697	1197	1697	2196	2696	3195	3695	4194	4693	499
870	5193	5692	6191	6690	7189	7688	8187	8685	9184	9683	499
871	.940 0182	0680	1179	1677	2176	2674	3172	3670	4169	4667	498
872	5165	5663	6161	6659	7157	7654	8152	8650	9147	9645	498
873	.941 0142	0640	1137	1635	2132	2629	3126	3623	4120	4617	497
874	5114	5611	6108	6605	7101	7598	8095	8591	9088	9584	497
875	.942 0081	0577	1073	1569	2065	2562	3058	3553	4049	4545	496
876	5041	5537	6032	6528	7024	7519	8015	8510	9005	9501	496
877	9996	0491	0986	1481	1976	2471	2966	3461	3956	4450	495
878	.943 4945	5440	5934	6429	6923	7418	7912	8406	8900	9395	494
879	9889	0383	0877	1371	1865	2358	2852	3346	3840	4333	494
N ^o .	0	1	2	3	4	5	6	7	8	9	Dif.

Briggs's Logarithms.

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N ^o .	0	1	2	3	4	5	6	7	8	9	Dif
880	.944.4827	5320	5814	6307	6800	7294	7787	8280	8773	9266	493
881	.9759	0252	0745	1238	1730	2223	2716	3208	3701	4193	493
882	.945.4686	5178	5671	6163	6655	7147	7639	8131	8623	9115	492
883	.9607	0099	0591	1082	1574	2066	2557	3049	3540	4031	492
884	.946.4523	5014	5505	5996	6487	6978	7469	7960	8451	8942	491
885	.9433	9923	0414	0905	1395	1886	2376	2866	3357	3847	490
886	.947.4337	4827	5317	5807	6297	6787	7277	7767	8257	8747	490
887	.9236	9726	0215	0705	1194	1684	2173	2662	3151	3641	489
888	.948.4130	4619	5108	5597	6085	6574	7063	7552	8040	8529	489
889	.9018	9506	9995	0483	0971	1460	1948	2436	2924	3412	488
890	.949.3900	4388	4876	5364	5852	6339	6827	7315	7802	8290	488
891	.8777	9264	9752	0239	0726	1213	1701	2188	2675	3162	487
892	.950.3649	4135	4622	5109	5596	6082	6569	7055	7542	8028	487
893	.8515	9001	9487	9973	0459	0946	1432	1918	2404	2889	486
894	.951.3375	3861	4347	4832	5318	5803	6289	6774	7260	7745	486
895	.8230	8716	9201	9686	0171	0656	1141	1626	2111	2595	485
896	.952.3080	3565	4049	4534	5018	5503	5987	6472	6956	7440	485
897	.7924	8409	8893	9377	9861	0345	0828	1312	1796	2280	484
898	.953.2763	3247	3731	4214	4697	5181	5664	6147	6631	7114	484
899	.7597	8080	8563	9046	9529	0012	0494	0977	1460	1943	483
900	.954.2425	2908	3390	3873	4355	4837	5319	5802	6284	6766	482
901	.7248	7730	8212	8694	9176	9657	0139	0621	1102	1584	482
902	.955.2065	2547	3028	3510	3991	4472	4953	5434	5916	6397	481
903	.6878	7358	7839	8320	8801	9282	9762	0243	0723	1204	481
904	.956.1684	2165	2645	3125	3606	4086	4566	5046	5526	6006	480
905	.6486	6966	7445	7925	8405	8885	9364	9844	0323	0803	480
906	.957.1282	1761	2241	2720	3199	3678	4157	4636	5115	5594	479
907	.6073	6552	7030	7509	7988	8466	8945	9423	9902	0380	479
908	.958.0858	1337	1815	2293	2771	3249	3727	4205	4683	5161	478
909	.5639	6117	6594	7072	7549	8027	8505	8982	9459	9937	478
910	.959.0414	0891	1368	1845	2322	2800	3276	3753	4230	4707	477
911	.5184	5660	6137	6614	7090	7567	8043	8520	8996	9472	477
912	.9948	0425	0901	1377	1853	2329	2805	3281	3756	4232	476
913	.960.4708	5183	5659	6135	6610	7086	7561	8036	8512	8987	476
914	.9462	9937	0412	0887	1362	1837	2312	2787	3262	3736	475
915	.961.4211	4686	5160	5635	6109	6583	7058	7532	8006	8481	474
916	.8955	9429	9903	0377	0851	1325	1799	2272	2746	3220	474
917	.962.3693	4167	4640	5114	5587	6061	6534	7007	7481	7954	473
918	.8427	8900	9373	9846	0319	0792	1264	1737	2210	2683	473
919	.963.3155	3628	4100	4573	5045	5517	5990	6462	6934	7406	472
920	.7878	8350	8822	9294	9766	0238	0710	1181	1653	2125	472
921	.964.2596	3068	3539	4011	4482	4953	5425	5896	6367	6838	471
922	.7309	7780	8251	8722	9193	9664	0135	0605	1076	1546	471
923	.965.2017	2488	2958	3428	3899	4369	4839	5309	5780	6250	470
924	.6720	7190	7660	8130	8599	9069	9539	0009	0478	0948	470
925	.966.1417	1887	2356	2826	3295	3764	4233	4703	5172	5641	469
926	.6110	6579	7048	7517	7985	8454	8923	9392	9860	0329	469
927	.967.0797	1266	1734	2203	2671	3139	3607	4076	4544	5012	468
928	.5480	5948	6416	6884	7351	7819	8287	8754	9222	9690	468
929	.968.0157	0625	1092	1559	2027	2494	2961	3428	3895	4362	467
930	.4829	5290	5763	6230	6697	7164	7630	8097	8564	9030	467
931	.9497	9963	0430	0896	1362	1829	2295	2761	3227	3693	466
932	.969.4159	4625	5091	5557	6023	6488	6954	7420	7885	8351	466
933	.8816	9282	9747	0213	0678	1143	1608	2074	2539	3004	465
934	.970.3469	3934	4399	4863	5328	5793	6258	6722	7187	7652	465
935	.8116	8581	9045	9509	9974	0438	0902	1366	1830	2294	464
936	.971.2758	3222	3686	4150	4614	5078	5542	6005	6469	6932	464
937	.7396	7859	8323	8786	9249	9713	0176	0639	1102	1565	463
938	.972.2028	2491	2954	3417	3880	4343	4805	5268	5731	6193	463
939	.6656	7118	7581	8043	8506	8968	9430	9892	0354	0816	462
N ^o .	0	1	2	3	4	5	6	7	8	9	Dif

10	0	1	2	3	4	5	6	7	8	9	Dif
940	.973.1279	1741	2202	2664	3126	3588	4050	4511	4973	5435	462
941	5896	6358	6819	7281	7742	8203	8664	9126	9587	10048	461
942	.974.0509	0970	1431	1892	2353	2814	3274	3735	4196	4656	461
943	5117	5577	6038	6498	6959	7419	7879	8340	8800	9260	460
944	9720	0180	0640	1100	1560	2020	2479	2939	3399	3858	460
945	.975.4318	4778	5237	5697	6156	6615	7075	7534	7993	8452	459
946	8911	9370	9829	0288	0747	1206	1665	2124	2582	3041	459
947	.976.3500	3958	4417	4875	5334	5792	6251	6709	7167	7625	458
948	8083	8541	9000	9458	9915	0373	0831	1289	1747	2204	458
949	.977.2662	3120	3577	4035	4492	4950	5407	5864	6322	6779	457
950	7236	7693	8150	8607	9064	9521	9978	0435	0892	1348	457
951	.978.1805	2262	2718	3175	3631	4088	4544	5001	5457	5913	457
952	6369	6826	7282	7738	8194	8650	9106	9562	10017	0473	456
953	.979.0929	1385	1840	2296	2751	3207	3662	4118	4573	5028	456
954	5484	5939	6394	6849	7304	7759	8214	8669	9124	9579	455
955	.980.0034	0488	0943	1398	1852	2307	2761	3216	3670	4125	455
956	4579	5033	5487	5942	6396	6850	7304	7758	8212	8666	454
957	9119	9573	0027	0481	0934	1388	1841	2295	2748	3202	454
958	.981.3655	4108	4562	5015	5468	5921	6374	6827	7280	7733	453
959	8186	8639	9092	9544	9997	0450	0902	1355	1807	2260	453
960	.982.2712	3165	3617	4069	4522	4974	5426	5878	6330	6782	452
961	7234	7686	8138	8589	9041	9493	9945	0396	0848	1299	452
962	.983.1751	2202	2654	3105	3556	4007	4459	4910	5361	5812	451
963	6263	6714	7165	7616	8066	8517	8968	9419	9869	10320	451
964	.984.0770	1221	1671	2122	2572	3022	3473	3923	4373	4823	450
965	5273	5723	6173	6623	7073	7523	7973	8422	8872	9322	450
966	9771	0221	0670	1120	1569	2019	2468	2917	3366	3816	449
967	.985.4265	4714	5163	5612	6061	6510	6959	7407	7856	8305	449
968	8754	9202	9651	10099	0548	0996	1445	1893	2341	2790	449
969	.986.3238	3686	4134	4582	5030	5478	5926	6374	6822	7270	448
970	7717	8165	8613	9060	9508	9955	0403	0850	1298	1745	448
971	.987.2192	2640	3087	3534	3981	442	4875	5322	5769	6216	447
972	6663	7109	7556	8003	8450	8896	9343	9789	10236	0682	447
973	.988.1128	1575	2021	2467	2913	3360	3806	4252	4698	5144	446
974	5590	6035	6481	6927	7373	7818	8264	8710	9155	9601	446
975	.989.0046	0492	0937	1382	1828	2273	2718	3163	3608	4053	445
976	4498	4943	5388	5833	6278	6722	7167	7612	8057	8501	445
977	8946	9390	9835	0279	0723	1168	1612	2056	2500	2944	444
978	.990.3389	3833	4277	4721	5164	5608	6052	649	6940	7383	444
979	7827	8271	8714	9158	9601	10044	0488	0931	1374	1818	443
980	.991.2261	2704	3147	3590	4033	4476	4919	5362	5805	6247	443
981	6690	7133	7575	8018	8461	8903	9345	9788	10230	0673	442
982	.992.1115	1557	1999	2441	2884	3326	3768	4210	4651	5093	442
983	5535	5977	6419	6860	7302	7744	8185	8627	9068	9510	442
984	9911	0392	0834	1275	1716	2157	2598	3039	348	3921	441
985	.993.4362	4803	5244	5685	6126	6566	7007	7448	7888	8329	441
986	8769	9210	9650	10090	0531	0971	1411	1851	2291	2731	440
987	.994.3172	3612	4051	4491	4931	5371	5811	6251	6690	7130	440
988	7569	8009	8448	8888	9327	9767	10206	0645	1085	1524	440
989	.995.1963	2402	2841	3280	3719	4158	4597	5036	5474	5913	439
990	635	6791	7229	7668	8106	8545	8983	9422	9860	10290	439
991	.996.073	1175	1613	2051	2489	2927	3365	3803	4241	4679	438
992	5117	5554	5992	6430	6868	7305	7743	8180	8618	9055	438
993	9492	9930	0367	0804	1242	1679	2116	2553	2990	3427	437
994	.997.3864	4301	4738	5174	5611	6048	6485	6921	7358	7794	437
995	8231	8667	9104	9540	9976	0413	0849	1285	1721	2157	436
996	.998.2593	3029	3465	3901	4337	4773	5209	5645	6080	6516	436
997	6952	7387	7823	82	8694	9129	9564	10000	0435	0870	435
998	.999.1305	1741	2176	2611	3046	3481	3916	4350	4785	5220	435
999	5655	6090	6524	6959	7393	7828	8262	8697	9131	9566	434
10	0	1	2	3	4	5	6	7	8	9	Dif

TAB. XXXIII. Numbers to Briggs's Logarithms. 77

Log	0	1	2	3	4	5	6	7	8	9	Dif.
,000	100. 0000	0230	0461	0691	0921	1152	1383	1613	1844	2074	230
,001		2305	2536	2767	2998	3229	3460	3691	3922	4153	231
,002		4616	4847	5079	5310	5542	5773	6005	6236	6468	232
,003		6932	7164	7395	7627	7860	8092	8324	8556	8788	232
,004		9253	9485	9718	9950	0183	0416	0648	0881	1114	233
,005	101. 1579	1812	2045	2278	2512	2745	2978	3211	3445	3678	233
,006		3911	4145	4378	4612	4846	5079	5313	5547	5781	234
,007		6249	6483	6717	6951	7185	7419	7654	7888	8122	234
,008		8591	8826	9061	9295	9530	9765	0000	0234	0469	235
,009	102. 0939	1175	1410	1645	1880	2115	2351	2586	2822	3057	235
,010		3293	3529	3764	4000	4236	4472	4708	4944	5180	236
,011		565	5888	6124	6361	6597	6833	7070	7306	7543	236
,012		8016	8253	8490	8727	8964	9201	9438	9675	9912	237
,013	103. 0386	0623	0861	1098	1336	1573	1811	2048	2286	2524	237
,014		2761	2999	3237	3475	3713	3951	4189	4427	4666	238
,015		512	5381	5619	5857	6096	6335	6573	6812	7051	239
,016		7528	7767	8006	8245	8484	8724	8963	9202	9441	239
,017		9920	0160	0399	0639	0878	1118	1358	1598	1838	240
,018	104. 2317	2557	2798	3038	3278	3518	3758	3999	4239	4480	240
,019		4720	4961	5201	5442	5683	5924	6165	6405	6646	241
,020		7129	7370	7611	7852	8093	8335	8576	8818	9059	241
,021		9542	9784	0026	0268	0510	0751	0993	1235	1478	242
,022	105. 1962	2204	2446	2689	2931	3174	3416	3659	3901	4144	242
,023		4387	4630	4873	5115	5358	5602	5845	6088	6331	243
,024		6818	7061	7304	7548	7791	8035	8279	8522	8766	244
,025		9254	9498	9742	9986	0230	0474	0718	0962	1207	244
,026	106. 1696	1940	2185	2429	2674	2919	3163	3408	3653	3898	245
,027		4143	4388	4633	4878	5124	5369	5614	5860	6105	245
,028		6596	6842	7087	7333	7579	7825	8071	8317	8563	246
,029		9055	9301	9547	9794	0040	0286	0533	0779	1026	246
,030	107. 1519	1766	2013	2260	2507	2754	3001	3248	3495	3742	247
,031		3989	4237	4484	4732	4979	5227	5474	5722	5970	248
,032		6465	6713	6961	7209	7457	7705	7953	8202	8450	248
,033		8947	9195	9444	9692	9941	0190	0438	0687	0936	249
,034	108. 1434	1683	1932	2181	2430	2680	2929	3178	3428	3677	249
,035		3927	4177	4426	4676	4926	5176	5425	5675	5925	250
,036		6426	6676	6926	7176	7427	7677	7928	8178	8429	250
,037		8930	9181	9432	9683	9933	0184	0436	0687	0938	251
,038	109. 1440	1692	1943	2195	2446	2698	2949	3201	3453	3704	252
,039		3956	4208	4460	4712	4964	5216	5469	5721	5973	252
,040		6478	6731	6983	7236	7489	7741	7994	8247	8500	253
,041		9006	9259	9512	9765	0019	0272	0525	0779	1032	253
,042	110. 1539	1793	2047	2300	2554	2808	3062	3316	3570	3824	254
,043		4279	4533	4787	5042	5296	5550	5805	6060	6314	254
,044		662	6879	7134	7388	7643	7899	8154	8409	8664	255
,045		9175	9430	9686	9941	0197	0453	0708	0964	1220	256
,046	111. 1732	1988	2244	2500	2756	3012	3269	3525	3782	4038	256
,047		4295	4551	4808	5065	5321	5578	5835	6092	6349	257
,048		6863	7120	7378	7635	7892	8150	8407	8665	8922	258
,049		9438	9696	9954	0211	0469	0727	0986	1244	1502	258
,050	112. 2018	2277	2535	2794	3052	3311	3570	3828	4087	4346	259
,051		4605	4864	5123	5382	5641	5900	6160	6419	6678	259
,052		7197	7457	7717	7976	8236	8496	8756	9016	9276	260
,053		9796	0056	0316	0575	0837	1097	1358	1618	1879	260
,054	113. 2400	2661	2922	3183	3444	3705	3966	4227	4488	4749	261
,055		5011	5272	5534	5795	6057	6318	6580	6842	7104	262
,056		7627	7889	8151	8413	8676	8938	9200	9462	9725	262
,057	114. 0250	0512	0775	1038	1300	1562	1826	2089	2352	2615	263
,058		2878	3142	3405	3668	3931	4195	4458	4722	4986	263
,059		5513	5777	6041	6305	6568	6833	7097	7361	7625	264
Log.	0	1	2	3	4	5	6	7	8	9	Dif.

Log.	0	1	2	3	4	5	6	7	8	9	Dif
,060	114.8154	8418	8682	8947	9212	9476	9741	0006	0271	0535	265
,061	115.0800	1065	1330	1596	1861	2126	2391	2657	2922	3188	265
,062		3453	3719	3985	4250	4516	4782	5048	5314	5580	266
,063		6112	6378	6645	6911	7178	7444	7711	7977	8244	266
,064		8777	9044	9311	9578	9845	0112	0380	0647	0914	267
,065	116.1449	1716	1984	2251	2519	2787	3054	3322	3590	3858	268
,066		4126	4394	4662	4930	5199	5467	5735	6004	6272	268
,067		6810	7078	7347	7616	7885	8154	8423	8692	8961	269
,068		9499	9769	0038	0308	0577	0847	1116	1386	1656	270
,069	117.2195	2465	2735	3005	3275	3546	3816	4086	4357	4627	270
,070		4898	5168	5439	5709	5980	6251	6522	6793	7064	271
,071		7606	7877	8148	8420	8691	8963	9234	9506	9777	271
,072	118.0321	0592	0864	1136	1408	1680	1952	2225	2497	2769	272
,073		3042	3314	3586	3859	4132	4404	4677	4950	5223	273
,074		5769	6042	6315	6588	6861	7135	7408	7682	7955	273
,075		8502	8776	9050	9323	9597	9871	0145	0419	0694	274
,076	119.1242	1516	1791	2065	2340	2614	2889	3164	3438	3713	275
,077		3988	4263	4538	4813	5088	5364	5639	5914	6190	275
,078		6741	7016	7292	7567	7843	8119	8395	8671	8947	276
,079		9499	9776	0052	0328	0605	0881	1158	1434	1711	277
,080	120.2264	2541	2818	3095	3372	3649	3927	4204	4481	4759	277
,081		5036	5313	5591	5869	6146	6424	6702	6980	7258	278
,082		7814	8092	8370	8648	8927	9205	9484	9762	0041	278
,083	121.0598	0877	1156	1435	1714	1993	2272	2551	2830	3109	279
,084		3389	3668	3948	4227	4507	4787	5066	5345	5626	280
,085		6186	6466	6746	7026	7307	7587	7867	8148	8428	280
,086		8990	9270	9551	9832	0113	0394	0675	0956	1237	281
,087	122.1800	2081	2362	2644	2925	3207	3489	3771	4052	4334	282
,088		4616	4898	5180	5462	5745	6027	6309	6592	6874	282
,089		7439	7722	8005	8287	8570	8853	9136	9419	9702	283
,090	123.0269	0552	0835	1119	1402	1686	1970	2253	2537	2821	284
,091		3105	3389	3673	3957	4241	4525	4810	5094	5378	284
,092		5947	6232	6517	6801	7086	7371	7656	7941	8226	285
,093		8796	9082	9367	9653	9938	0224	0509	0795	1081	285
,094	124.1652	1938	2224	2510	2796	3083	3369	3655	3942	4228	286
,095		4515	4801	5088	5375	5661	5948	6235	6522	6809	287
,096		7384	7671	7958	8245	8533	8820	9108	9396	9683	287
,097	125.0259	0547	0835	1123	1411	1699	1988	2276	2564	2853	288
,098		3141	3430	3718	4007	4296	4585	4874	5163	5452	289
,099		6030	6319	6609	6898	7187	7477	7766	8056	8346	289
,100		8925	9215	9505	9795	0085	0376	0666	0956	1247	290
,101	126.1828	2118	2409	2699	2990	3281	3572	3863	4154	4445	291
,102		4736	5028	5319	5610	5902	6193	6485	6777	7068	292
,103		7652	7944	8236	8528	8820	9112	9404	9697	9989	292
,104	127.0574	0867	1159	1452	1745	2038	2331	2624	2917	3210	293
,105		3503	3796	4090	4383	4677	4970	5264	5557	5851	294
,106		6439	6733	7027	7321	7615	7909	8203	8498	8792	294
,107		9381	9676	9971	0265	0560	0855	1150	1445	1740	295
,108	128.2331	2626	2921	3217	3512	3808	4103	4399	4695	4991	296
,109		5287	5583	5879	6175	6471	6767	7064	7360	7656	296
,110		8250	8546	8843	9140	9437	9734	0031	0328	0625	297
,111	129.1219	1517	1814	2112	2409	2707	3004	3302	3600	3898	298
,112		4196	4494	4792	5090	5388	5687	5985	6284	6582	298
,113		7179	7478	7777	8076	8375	8674	8973	9272	9571	299
,114	130.0170	0469	0768	1068	1368	1667	1967	2267	2567	2867	300
,115		3167	3467	3767	4067	4368	4668	4968	5269	5570	300
,116		6171	6472	6773	7073	7374	7676	7977	8278	8579	301
,117		9182	9483	9785	0087	0388	0690	0992	1294	1596	302
,118	131.2200	2502	2804	3107	3409	3711	4014	4317	4619	4922	302
,119		5225	5528	5831	6134	6437	6740	7043	7346	7650	303
Log.	0	1	2	3	4	5	6	7	8	9	Dif

Numbers to Briggs's Logarithms.

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Log	0	1	2	3	4	5	6	7	8	9	Dif.
.120	131.825	3560	8864	9168	9471	9775	0079	0383	0687	0991	304
.121	132.1296	1600	1904	2209	2513	2818	3122	3427	3732	4037	305
.122	4342	4647	4952	5257	5562	5867	6172	6478	6783	7089	305
.123	7394	7700	8006	8312	8618	8924	9230	9536	9842	0.48	306
.124	133.0454	0761	1067	1374	1680	1987	2294	2601	2907	3214	307
.125	3521	3829	4136	4443	4750	5058	5365	5673	5980	6288	307
.126	6596	6903	7211	7519	7827	8135	8443	8752	9060	9368	308
.127	9677	9985	0294	0602	0911	1220	1529	1838	2147	2456	309
.128	134.2765	3074	3383	3693	4002	4312	4621	4931	5241	5550	310
.129	5860	6170	6480	6790	7101	7411	7721	8031	8342	8652	310
.130	8963	9274	9584	9895	0206	0517	0828	1139	1450	1761	311
.131	135.2073	2384	2695	3007	3318	3630	3942	4254	4565	4877	312
.132	5189	5501	5814	6126	6438	6751	7063	7375	7688	8001	312
.133	8313	8626	8939	9252	9565	9878	0191	0505	0818	1131	313
.134	136.1445	1758	2072	2385	2699	3013	3327	3641	3955	4269	314
.135	4583	4897	5212	5526	5841	6155	6470	6784	7099	7414	315
.136	7729	8044	8359	8674	8989	9304	9620	9935	0251	0566	315
.137	137.0882	1197	1513	1829	2145	2461	2777	3093	3409	3726	316
.138	4042	4358	4675	4991	5308	5625	5942	6258	6575	6892	317
.139	7209	7527	7844	8161	8479	8796	9113	9431	9749	0066	317
.140	138.0384	0702	1020	1338	1656	1974	2293	2611	2929	3248	318
.141	3566	3885	4204	4522	4841	5160	5479	5798	6117	6437	319
.142	6756	7075	7395	7714	8034	8353	8673	8993	9313	9633	320
.143	9953	0273	0593	0913	1233	1554	1874	2195	2515	2836	320
.144	139.3157	3478	3799	4119	4441	4762	5083	5404	5725	6047	321
.145	6368	6690	7012	7333	7655	7977	8299	8621	8943	9265	322
.146	9587	9910	0232	0554	0877	1200	1522	1845	2168	2491	323
.147	140.2814	3137	3460	3783	4106	4430	4753	5077	5400	5724	323
.148	6048	6371	6695	7019	7343	7667	7991	8316	8640	8964	324
.149	9289	9613	9938	0263	0588	0912	1237	1562	1887	2212	325
.150	141.2538	2863	3188	3514	3839	4165	4490	4816	5142	5468	326
.151	5794	6120	6446	6772	7098	7425	7751	8078	8404	8731	326
.152	9058	9384	9711	0038	0365	0692	1019	1347	1674	2001	327
.153	142.2329	2656	2984	3312	3639	3967	4295	4623	4951	5279	328
.154	5608	5936	6264	6593	6921	7250	7579	7907	8236	8565	329
.155	8894	9223	9552	9881	0211	0540	0869	1199	1529	1858	329
.156	143.2188	2518	2848	3178	3508	3838	4168	4498	4829	5159	330
.157	5489	5820	6151	6481	6812	7143	7474	7805	8136	8467	331
.158	8799	9130	9461	9793	0124	0456	0788	1120	1451	1783	332
.159	144.2115	2447	2780	3112	3444	3777	4109	4442	4774	5107	332
.160	5440	5773	6106	6439	6772	7105	7438	7771	8105	8438	333
.161	8772	9105	9439	9773	0107	0441	0775	1109	1443	1777	334
.162	145.2112	2446	2780	3115	3450	3784	4119	4454	4789	5124	335
.163	5459	5794	6129	6465	6800	7136	7471	7807	8143	8478	336
.164	8814	9150	9486	9822	0158	0495	0831	1167	1504	1841	336
.165	146.2177	2514	2851	3188	3525	3862	4199	4536	4873	5210	337
.166	5548	5885	6223	6561	6898	7236	7574	7912	8250	8588	338
.167	8926	9265	9603	9941	0280	0618	0957	1296	1635	1974	339
.168	147.2313	2652	2991	3330	3669	4009	4348	4688	5027	5367	339
.169	5707	6046	6386	6726	7066	7406	7747	8087	8427	8768	340
.170	9108	9449	9790	0130	0471	0812	1153	1494	1836	2177	341
.171	148.2518	2859	3201	3543	3884	4226	4568	4910	5251	5594	342
.172	5936	6278	6620	6962	7305	7647	7990	8333	8675	9018	343
.173	9361	9704	0047	0390	0733	1077	1420	1764	2107	2451	343
.174	149.2794	3138	3482	3826	4170	4514	4858	5202	5547	5891	344
.175	6236	6580	6925	7270	7614	7959	8304	8649	8994	9340	345
.176	9685	0030	0376	0721	1067	1412	1758	2104	2450	2796	346
.177	150.3142	3480	3834	4181	4528	4874	5220	5567	5913	6260	347
.178	6607	6954	7301	7648	7995	8343	8690	9037	9385	9732	347
.179	151.0080	0428	0776	1124	1472	1820	2168	2516	2864	3213	348
Log	0	1	2	3	4	5	6	7	8	9	Dif.

Log.	0	1	2	3	4	5	6	7	8	9	Dif
,180	51.3561	3910	4258	4607	4956	5305	5654	6003	6352	6701	349
,181	7050	7400	7749	8099	8448	8798	9148	9498	9847	0197	350
,182	152.0548	0898	1248	1598	1949	2299	2650	3000	3351	3702	351
,183	4053	4404	4755	5106	5457	5808	6160	6511	6863	7214	351
,184	7566	7918	8270	8622	8974	9326	9678	0030	0383	0735	352
,185	153.1087	1440	1793	2145	2498	2851	3204	3557	3910	4264	353
,186	4617	4970	5324	5677	6031	6385	6739	7092	7446	7801	354
,187	8155	8509	8863	9218	9572	9927	0281	0636	0991	1346	355
,188	154.1700	2055	2411	2766	3121	3476	3832	4187	4543	4899	355
,189	5254	5610	5966	6322	6678	7035	7391	7747	8104	8460	356
,190	8817	9173	9530	9887	0244	0601	0958	1315	1672	2030	357
,191	155.2387	2745	3102	3460	3817	4175	4533	4891	5249	5607	358
,192	5966	6324	6682	7041	7399	7758	8117	8476	8834	9193	359
,193	9553	9912	0271	0630	0990	1349	1709	2068	2428	2788	360
,194	156.3148	3508	3868	4228	4588	4948	5309	5669	6030	6390	360
,195	6751	7112	7473	7834	8195	8556	8917	9278	9640	0001	361
,196	157.0363	0724	1086	1448	1810	2172	2534	2896	3258	3620	362
,197	3983	4345	4708	5071	5433	5796	6159	6522	6885	7248	363
,198	7611	7975	8338	8701	9065	9429	9792	0156	0520	0884	364
,199	158.1248	1612	1976	2341	2705	3070	3434	3799	4163	4528	365
,200	4893	5258	5623	5988	6354	6719	7084	7450	7815	8181	365
,201	8547	8913	9278	9644	0011	0377	0743	1109	1476	1842	366
,202	159.2209	2575	2942	3309	3676	4043	4410	4777	5144	5512	367
,203	5879	6247	6614	6982	7350	7718	8085	8453	8822	9190	368
,204	9558	9926	0295	0663	1032	1401	1769	2138	2507	2876	369
,205	160.3245	3615	3984	4353	4723	5092	5462	5832	6201	6571	370
,206	6941	7311	7681	8052	8422	8792	9163	9533	9904	0275	370
,207	161.0646	1017	1388	1759	2130	2501	2872	3244	3615	3987	371
,208	4359	4730	5102	5474	5846	6218	6590	6963	7335	7708	372
,209	8080	8453	8825	9198	9571	9944	0317	0690	1063	1437	373
,210	162.1810	2184	2557	2931	3305	3678	4052	4426	4800	5175	374
,211	5549	5923	6298	6672	7047	7421	7796	8171	8546	8921	375
,212	9296	9671	0047	0422	0797	1173	1549	1924	2300	2676	376
,213	163.3052	3428	3804	4180	4557	4933	5310	5686	6063	6440	376
,214	6817	7193	7570	7948	8325	8702	9079	9457	9834	0212	377
,215	164.0590	0968	1345	1723	2102	2480	2858	3236	3615	3993	378
,216	4372	4750	5129	5508	5887	6266	6645	7024	7404	7783	379
,217	8162	8542	8922	9301	9681	0061	0441	0821	1201	1581	380
,218	165.1962	2342	2723	3103	3484	3865	4246	4627	5008	5389	381
,219	5770	6151	6533	6914	7296	7677	8059	8441	8823	9205	382
,220	9587	9969	0351	0734	1116	1499	1881	2264	2647	3030	383
,221	166.3413	3796	4179	4562	4945	5329	5712	6096	6480	6863	383
,222	7247	7631	8015	8399	8784	9168	9552	9937	0321	0706	384
,223	167.1091	1475	1860	2245	2630	3016	3401	3786	4172	4557	385
,224	4943	5329	5714	6100	6486	6872	7258	7645	8031	8418	386
,225	8804	9191	9577	9964	0351	0738	1125	1512	1899	2287	387
,226	168.2674	3062	3449	3837	4225	4612	5000	5388	5777	6165	388
,227	6553	6941	7330	7718	8107	8496	8885	9274	9663	0052	389
,228	169.0441	0830	1220	1609	1999	2388	2778	3168	3558	3948	390
,229	4338	4728	5118	5509	5899	6290	6680	7071	7462	7853	391
,230	8244	8635	9026	9417	9809	0200	0591	0983	1375	176	391
,231	170.2159	2550	2943	3335	3727	4119	4512	4904	5297	5690	392
,232	6082	6475	6868	7261	7654	8048	8441	8834	9228	9622	393
,233	171.0015	0409	0803	1197	1591	1985	2379	2774	3168	3563	394
,234	3957	4352	4747	5142	5537	5932	6327	6722	7117	7513	395
,235	7908	8304	8700	9095	9491	9887	0283	0680	1076	1472	396
,236	172.1869	2265	2662	3058	3455	3852	4249	4646	5043	5441	397
,237	5838	6235	6633	7030	7428	7826	8224	8622	9020	9418	398
,238	9810	0215	0613	1012	1410	1809	2208	2607	3006	3405	399
,239	173.380	4203	4603	5002	5402	5801	6201	6601	7001	7401	400
Log.	0	1	2	3	4	5	6	7	8	9	Dif

Numbers to Briggs's Logarithms.

8

Log	0	1	2	3	4	5	6	7	8	9	Dif
,240	173.7801	8201	8601	9002	9402	9803	0203	0604	1005	1406	401
,241	174.1807	2208	2609	3010	3412	3813	4215	4617	5018	5420	401
,242	5822	6224	6626	7029	7431	7833	8236	8638	9041	9444	402
,243	9847	0250	0653	1056	1459	1862	2266	2669	3073	3477	403
,244	175.3881	4284	4688	5092	5497	5901	6305	6710	7114	7519	404
,245	7924	8328	8733	9138	9543	9949	0354	0759	1165	1570	405
,246	176.1976	2382	2788	3194	3600	4006	4412	4818	5225	5631	406
,247	6038	6445	6851	7258	7665	8072	8479	8887	9294	9701	407
,248	177.0109	0517	0924	1332	1740	2148	2556	2964	3373	3781	408
,249	4189	4598	5007	5415	5824	6233	6642	7051	7461	7870	409
,250	8279	8689	9099	9508	9918	0328	0738	1148	1558	1968	410
,251	178.2379	2789	3200	3610	4021	4432	4843	5254	5665	6076	411
,252	6488	6899	7310	7722	8134	8546	8957	9369	9781	0194	412
,253	179.0606	1018	1431	1843	2256	2669	3081	3494	3907	4320	413
,254	4734	5147	5560	5974	6387	6801	7215	7629	8043	8457	414
,255	8871	9285	9700	0114	0528	0943	1358	1773	2188	2603	415
,256	180.3018	3433	3848	4264	4679	5095	5510	5926	6342	6758	416
,257	7174	7590	8007	8423	8839	9256	9673	0089	0506	0923	417
,258	181.1340	1757	2174	2592	3009	3427	3844	4262	4680	5098	418
,259	5516	5934	6352	6770	7189	7607	8026	8444	8863	9282	419
,260	9701	0120	0539	0958	1378	1797	2217	2636	3056	3476	419
,261	182.3896	4316	4736	5156	5576	5997	6417	6838	7259	7679	420
,262	8100	8521	8942	9363	9785	0206	0628	1049	1471	1893	421
,263	183.2314	2736	3158	3581	4003	4425	4848	5270	5693	6116	422
,264	6538	6961	7384	7807	8231	8654	9077	9501	9924	0348	423
,265	184.0772	1196	1620	2044	2468	2892	3317	3741	4166	4591	424
,266	5015	5440	5865	6290	6716	7141	7566	7992	8417	8843	425
,267	9269	9694	0120	0546	0973	1399	1825	2252	2678	3105	426
,268	185.3532	3958	4385	4812	5240	5667	6094	6522	6949	7377	427
,269	7804	8232	8660	9088	9516	9945	0373	0801	1230	1658	428
,270	186.2087	2516	2945	3374	3803	4232	4661	5091	5520	5950	429
,271	6380	6809	7239	7669	8099	8530	8960	9390	9821	0251	430
,272	187.0682	1113	1544	1975	2406	2837	3268	3700	4131	4563	431
,273	4995	5426	5858	6290	6722	7154	7587	8019	8452	8884	432
,274	9317	9750	0182	0615	1049	1482	1915	2348	2782	3215	433
,275	188.3649	4083	4517	4951	5385	5819	6253	6688	7122	7557	434
,276	7991	8426	8861	9296	9731	0166	0602	1037	1472	1908	435
,277	189.2344	2779	3215	3651	4087	4524	4960	5396	5833	6269	436
,278	6706	7143	7580	8017	8454	8891	9328	9766	0203	0641	437
,279	190.1078	1516	1954	2392	2830	3268	3707	4145	4583	5022	438
,280	5461	5900	6338	6777	7217	7656	8095	8534	8974	9414	439
,281	9853	0293	0733	1173	1613	2053	2494	2934	3375	3815	440
,282	191.4256	4697	5138	5579	6020	6461	6902	7344	7785	8227	441
,283	8669	9111	9553	9995	0437	0879	1321	1764	2206	2649	442
,284	192.3092	3535	3978	4421	4864	5307	5750	6194	6637	7081	443
,285	7525	7969	8413	8857	9301	9745	0190	0634	1079	1524	444
,286	193.1968	2413	2858	3303	3749	4194	4639	5085	5530	5976	445
,287	6422	6868	7314	7760	8206	8653	9099	9546	9992	0439	446
,288	194.0886	1333	1780	2227	2674	3122	3569	4017	4464	4912	447
,289	5360	5808	6256	6704	7153	7601	8050	8498	8947	9396	448
,290	9845	0294	0743	1192	1641	2091	2540	2990	3440	3890	449
,291	195.4339	4790	5240	5690	6140	6591	7041	7492	7943	8394	450
,292	8845	9296	9747	0198	0650	1101	1553	2005	2456	2908	452
,293	196.3360	3812	4265	4717	5169	5622	6075	6527	6980	7433	453
,294	7886	8339	8793	9246	9700	0153	0607	1061	1515	1969	454
,295	197.2423	2877	3331	3786	4240	4695	5150	5604	6059	6514	455
,296	6970	7425	7880	8336	8791	9247	9703	0159	0615	1071	456
,297	198.1527	1983	2440	2896	3353	3810	4266	4723	5180	5638	457
,298	6095	6552	7010	7467	7925	8383	8841	9299	9757	0215	458
,299	199.0673	1132	1590	2049	2508	2967	3425	3883	4344	4803	459
Log	0	1	2	3	4	5	6	7	8	9	Dif

Log	0	1	2	3	4	5	6	7	8	9	Dif
.300	199.5262	5722	6181	6641	7101	7561	8021	8481	8941	9401	460
.301	9862	0322	0783	1244	1705	2166	2627	3088	3549	4011	461
.302	200.4472	4934	5395	5857	6319	6781	7243	7705	8168	8630	462
.303	9093	9555	0018	0481	0944	1407	1870	2334	2797	3261	463
.304	201.3724	4188	4652	5116	5580	6044	6508	6973	7437	7902	464
.305	8366	8831	9296	9761	0226	0691	1157	1622	2088	2553	465
.306	202.3019	3485	3951	4417	4883	5350	5816	6283	6749	7216	466
.307	7683	8150	8617	9084	9551	0019	0486	0954	1421	1889	467
.308	203.2357	2825	3293	3761	4230	4698	5167	5635	6104	6573	468
.309	7042	7511	7980	8450	8919	9389	9858	0328	0798	1268	470
.310	204.1738	2208	2678	3149	3619	4090	4561	5031	5502	5973	471
.311	6445	6916	7387	7859	8330	8802	9274	9746	0218	0690	472
.312	205.1162	1635	2107	2580	3052	3525	3998	4471	4944	5417	473
.313	5891	6364	6838	7311	7785	8259	8733	9207	9681	0155	474
.314	206.0630	1104	1579	2054	2529	3004	3479	3954	4429	4905	475
.315	5380	5856	6332	6807	7283	7759	8236	8712	9188	9665	476
.316	207.0141	0618	1095	1572	2049	2526	3003	3481	3958	4436	477
.317	4914	5391	5869	6347	6825	7304	7782	8261	8739	9218	478
.318	9697	0176	0655	1134	1613	2092	2572	3051	3531	4011	479
.319	208.4491	4971	5451	5931	6412	6892	7373	7853	8334	8815	480
.320	9296	9777	0259	0740	1221	1703	2185	2666	3148	3630	482
.321	209.4112	4595	5077	5560	6042	6525	7008	7490	7974	8457	483
.322	8940	9423	9907	0390	0874	1358	1842	2326	2810	3294	484
.323	210.3778	4263	4747	5232	5717	6202	6687	7172	7657	8143	485
.324	8628	9114	9599	0085	0571	1057	1543	2030	2516	3002	486
.325	211.3489	3976	4463	4949	5437	5924	6411	6898	7386	7873	487
.326	8361	8849	9337	9825	0313	0801	1290	1778	2267	2756	488
.327	212.3244	3733	4222	4712	5201	5690	6180	6670	7159	7649	489
.328	8139	8629	9119	9610	0100	0591	1081	1572	2063	2554	491
.329	213.3045	3536	4027	4519	5010	5502	5994	6486	6978	7470	492
.330	7962	8454	8947	9439	9932	0425	0918	1411	1904	2397	493
.331	214.2891	3384	3878	4371	4865	5359	5853	6347	6842	7336	494
.332	7830	8325	8820	9315	9810	0305	0800	1295	1791	2286	495
.333	215.2782	3277	3773	4269	4765	5262	5758	6254	6751	7248	496
.334	7744	8241	8738	9235	9733	0230	0728	1225	1723	2221	497
.335	216.2719	3217	3715	4213	4711	5210	5708	6207	6706	7205	498
.336	7704	8203	8703	9202	9702	0201	0701	1201	1701	2201	500
.337	217.2701	3202	3702	4203	4703	5204	5705	6206	6707	7208	501
.338	7710	8211	8713	9215	9716	0218	0720	1223	1725	2227	502
.339	218.2730	3233	3735	4238	4741	5244	5748	6251	6754	7258	503
.340	7762	8265	8769	9273	9778	0282	0786	1291	1795	2300	504
.341	219.2805	3310	3815	4320	4826	5331	5837	6342	6848	7354	505
.342	7860	8366	8872	9379	9885	0392	0898	1405	1912	2419	507
.343	220.2926	3434	3941	4449	4956	5464	5972	6480	6988	7496	508
.344	8005	8513	9022	9530	0039	0548	1057	1566	2076	2585	509
.345	221.3095	3604	4114	4624	5134	5644	6154	6665	7175	7686	510
.346	8196	8707	9218	9729	0240	0752	1263	1775	2286	2798	511
.347	222.3310	3822	4334	4846	5359	5871	6384	6896	7409	7922	512
.348	8435	8948	9462	9975	0489	1002	1516	2030	2544	3058	514
.349	223.3572	4087	4601	5116	5630	6145	6660	7175	7690	8206	515
.350	8721	9237	9752	0268	0784	1300	1816	2332	2849	3365	516
.351	224.3882	4399	4916	5432	5950	6467	6984	7502	8019	8537	517
.352	9055	9573	0091	0609	1127	1645	2164	2683	3201	3720	519
.353	225.4239	4758	5278	5797	6316	6836	7356	7876	8396	8916	520
.354	9436	9956	0477	0997	1518	2039	2559	3080	3602	4123	521
.355	226.4644	5166	5687	6209	6731	7253	7775	8297	8820	9342	522
.356	9865	0388	0910	1433	1956	2480	3003	3526	4050	4574	523
.357	227.5097	5621	6145	6670	7194	7718	8243	8767	9292	9817	525
.358	228.0342	0867	1392	1918	2443	2969	3495	4021	4546	5073	526
.359	5599	6125	6652	7178	7705	8232	8759	9286	9813	0340	527
Log	0	1	2	3	4	5	6	7	8	9	Dif

Numbers to Briggs's Logarithms.

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Log.	0	1	2	3	4	5	6	7	8	9	Dif.
360	229.0868	1395	1923	2451	2979	3507	4035	4563	5091	5620	528
361	6149	6677	7206	7735	8264	8794	9323	9853	0382	0912	529
362	230.1442	1972	2502	3032	3563	4093	4624	5154	5685	6216	530
363	6747	7278	7810	8341	8873	9404	9936	0468	1000	1532	532
364	231.2065	2597	3130	3662	4195	4728	5261	5794	6328	6861	533
365	7395	7928	8462	8996	9530	0064	0598	1133	1667	2202	534
366	232.2737	3272	3807	4342	4877	5412	5948	6484	7019	7555	535
367	8091	8627	9164	9700	0236	0773	1310	1847	2384	2921	537
368	233.3458	3995	4533	5071	5608	6146	6684	7222	7760	8299	538
369	8837	9376	9915	0453	0992	1531	2071	2610	3150	3689	539
370	234.4229	4769	5309	5849	6389	6929	7470	8010	8551	9092	540
371	9633	0174	0715	1256	1798	2339	2881	3423	3965	4507	542
372	235.5049	5592	6134	6677	7219	7762	8305	8848	9391	9935	543
373	236.0478	1022	1566	2109	2653	3197	3742	4286	4830	5375	544
374	5920	6465	7009	7555	8100	8645	9191	9736	0282	0828	545
375	237.1374	1920	2466	3012	3559	4105	4652	5199	5746	6293	547
376	6840	7388	7935	8483	9030	9578	0126	0674	1223	1771	548
377	238.2319	2868	3417	3966	4515	5064	5613	6162	6712	7262	549
378	7811	8361	8911	9461	0012	0562	1112	1663	2214	2765	550
379	239.3316	3867	4418	4970	5521	6073	6625	7176	7728	8281	552
380	8833	9385	9938	0491	1043	1596	2149	2702	3256	3809	553
381	240.4363	4916	5470	6024	6578	7133	7687	8241	8796	9351	554
382	9905	0460	1015	1571	2126	2682	3237	3793	4349	4905	556
383	241.5461	6018	6573	7130	7687	8243	8800	9357	9914	0472	557
384	242.1029	1587	2144	2702	3260	3818	4376	4934	5493	6051	558
385	6610	7169	7728	8287	8846	9405	9965	0524	1084	1644	559
386	243.2204	2764	3324	3885	4445	5006	5567	6127	6688	7250	561
387	7811	8372	8934	9495	0057	0619	1181	1743	2306	2868	562
388	244.3431	3993	4556	5119	5682	6245	6809	7372	7936	8499	563
389	9063	9627	0191	0756	1320	1884	2449	3014	3579	4144	565
390	245.4709	5274	5840	6405	6971	7537	8103	8669	9235	9801	566
391	246.0368	0934	1501	2068	2635	3202	3769	4336	4904	5472	567
392	6039	6607	7175	7743	8312	8880	9449	0017	0586	1155	568
393	247.1724	2293	2863	3432	4002	4571	5141	5711	6281	6852	570
394	7422	7993	8563	9134	9705	0276	0847	1418	1990	2561	571
395	248.3133	3705	4277	4849	5421	5994	6566	7139	7711	8284	572
396	8857	9430	0004	0577	1151	1724	2298	2872	3446	4020	574
397	249.4595	5169	5744	6319	6893	7468	8044	8619	9194	9770	575
398	250.0345	0921	1497	2073	2649	3226	3802	4379	4955	5532	576
399	6109	6686	7264	7841	8419	8996	9574	0152	0730	1308	578
400	251.1886	2465	3043	3622	4201	4780	5359	5938	6518	7097	579
401	7677	8257	8837	9417	9997	0577	1158	1738	2319	2900	580
402	252.3481	4062	4643	5225	5806	6388	6969	7551	8133	8716	582
403	9298	9880	0463	1046	1629	2212	2795	3378	3961	4545	583
404	253.5129	5712	6296	6880	7465	8049	8633	9218	9803	0388	584
405	254.0973	1558	2143	2729	3314	3900	4486	5072	5658	6244	586
406	6830	7417	8003	8590	9177	9764	0351	0939	1526	2114	587
407	255.2701	3289	3877	4465	5054	5642	6230	6819	7408	7997	588
408	8586	9175	9764	0354	0944	1533	2123	2713	3303	3894	590
409	256.4484	5075	5665	6256	6847	7438	8029	8621	9212	9804	591
410	257.0396	0988	1580	2172	2764	3357	3949	4542	5135	5728	593
411	6321	6914	7508	8101	8695	9289	9883	0477	1071	1666	594
412	258.2260	2850	3450	4045	4640	5235	5830	6426	7021	7617	595
413	8213	8809	9405	0001	0598	1194	1791	2388	2985	3582	597
414	259.4179	4777	5374	5972	6570	7168	7766	8364	8962	9561	598
415	260.0160	0758	1357	1956	2556	3155	3754	4354	4954	5554	599
416	6154	6754	7354	7954	8555	9156	9757	0358	0959	1560	601
417	261.2161	2763	3365	3966	4568	5170	5773	6375	6978	7580	602
418	8183	8786	9389	9992	0596	1199	1803	2406	3010	3614	604
419	262.4219	4823	5427	6032	6637	7242	7847	8452	9057	9662	605
Log.	0	1	2	3	4	5	6	7	8	9	

Log.	0	1	2	3	4	5	6	7	8	9	Dif.
.420	263.0268	0874	1480	2086	2692	3298	3904	4511	5118	5724	606
.421	6331	6938	7546	8153	8761	9368	9976	0584	1192	1800	608
.422	264.2409	3017	3626	4235	4844	5453	6062	6671	7281	7890	609
.423	8500	9110	9720	0330	0941	1551	2162	2772	3383	3994	611
.424	265.4606	5217	5828	6440	7052	7664	8276	8888	9500	0112	612
.425	266.0725	1338	1951	2564	3177	3790	4404	5017	5631	6245	613
.426	6859	7473	8087	8702	9316	9931	0546	1161	1776	2391	615
.427	267.3006	3622	4238	4853	5469	6086	6702	7318	7935	8551	616
.428	9168	9785	0402	1020	1637	2255	2872	3490	4108	4726	618
.429	268.5344	5963	6581	7200	7819	8438	9057	9676	0296	0915	619
.430	269.1535	2155	2775	3395	4015	4635	5256	5877	6497	7118	620
.431	7739	8361	8982	9604	0225	0847	1469	2091	2713	3336	622
.432	270.3958	4581	5204	5827	6450	7073	7697	8320	8944	9568	623
.433	271.0192	0816	1440	2064	2689	3314	3938	4563	5189	5814	625
.434	6439	7063	7691	8316	8942	9568	0195	0821	1448	2074	626
.435	272.2701	3328	3955	4583	5210	5838	6465	7093	7721	8349	628
.436	8978	9606	0235	0864	1492	2121	2751	3380	4009	4639	629
.437	273.5269	5899	6529	7159	7789	8420	9050	9681	0312	0943	631
.438	274.1574	2206	2837	3469	4100	4732	5364	5997	6629	7261	632
.439	7894	8527	9160	9793	0426	1060	1693	2327	2961	3595	633
.440	275.4229	4863	5497	6132	6767	7401	8036	8672	9307	9942	635
.441	276.0578	1214	1849	2485	3122	3758	4394	5031	5668	6305	636
.442	6942	7579	8216	8854	9491	0129	0767	1405	2043	2682	638
.443	277.3320	3959	4598	5237	5876	6515	7154	7794	8433	9073	639
.444	9713	0353	0994	1634	2275	2915	3556	4197	4838	5480	641
.445	278.6121	6763	7405	8046	8688	9331	9973	0615	1258	1901	642
.446	279.2544	3187	3830	4474	5117	5761	6405	7049	7693	8337	644
.447	8981	9626	0271	0915	1560	2204	2851	3496	4142	4788	645
.448	280.5434	6080	6726	7372	8019	8665	9312	9959	0606	1253	647
.449	281.1901	2548	3196	3844	4492	5140	5788	6437	7085	7734	648
.450	8383	9032	9681	0330	0980	1630	2279	2929	3579	4230	650
.451	282.4880	5531	6181	6832	7483	8134	8785	9437	0088	0740	651
.452	283.1392	2044	2696	3349	4001	4654	5306	5959	6612	7266	653
.453	7919	8573	9226	9880	0534	1188	1842	2497	3151	3806	654
.454	284.4461	5116	5771	6427	7082	7738	8394	9050	9706	0362	656
.455	285.1018	1675	2332	2988	3645	4303	4960	5617	6275	6933	657
.456	7591	8249	8907	9565	0224	0882	1541	2200	2859	3519	659
.457	286.4178	4838	5497	6157	6817	7477	8138	8798	9459	0120	660
.458	287.0781	1442	2103	2764	3426	4088	4749	5411	6074	6736	662
.459	7398	8061	8724	9387	0050	0713	1376	2040	2704	3368	663
.460	288.4032	4696	5360	6024	6689	7354	8019	8684	9349	0014	665
.461	289.0680	1346	2011	2677	3344	4010	4676	5343	6010	6677	666
.462	7344	8011	8678	9346	0013	0681	1349	2017	2686	3354	668
.463	290.4023	4691	5360	6029	6699	7368	8037	8707	9377	0047	669
.464	291.0717	1387	2058	2728	3399	4070	4741	5412	6084	6755	671
.465	7427	8099	8771	9443	0115	0788	1460	2133	2806	3479	673
.466	292.4152	4826	5499	6173	6847	7521	8195	8869	9544	0218	674
.467	293.0893	1568	2243	2919	3594	4270	4945	5621	6297	6973	676
.468	7650	8326	9003	9680	0357	1034	1711	2388	3066	3744	677
.469	294.4422	5100	5770	6456	7135	7813	8492	9171	9850	0530	679
.470	295.1209	1889	2569	3249	3929	4609	5289	5970	6651	7331	680
.471	8012	8694	9375	0056	0738	1420	2102	2784	3466	4149	682
.472	296.4831	5514	6197	6880	7563	8247	8930	9614	0298	0982	683
.473	297.1666	2350	3035	3719	4404	5089	5774	6460	7145	7831	685
.474	8516	9202	9888	0575	1261	1948	2634	3321	4008	4695	687
.475	298.5383	6070	6758	7446	8134	8822	9510	0198	0887	1576	688
.476	299.2265	2954	3643	4332	5022	5712	6401	7091	7782	8472	690
.477	9163	9853	0544	1235	1926	2617	3309	4000	4692	5384	691
.478	300.6076	6769	7461	8154	8846	9539	0232	0925	1619	2312	693
.479	301.3006	3700	4394	5088	5782	6477	7172	7866	8561	9256	695
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.480	301.9952	0647	1343	2039	2734	3431	4127	4823	5520	6217	696
.481	302.6913	7610	8308	9005	9703	0400	1098	1796	2494	3193	698
.482	303.3891	4590	5289	5988	6687	7386	8086	8785	9485	0185	699
.483	304.0885	1585	2286	2986	3687	4388	5089	5790	6492	7193	701
.484	7895	8597	9299	0001	0703	1406	2109	2812	3515	4218	703
.485	305.4921	5625	6328	7032	7736	8440	9145	9849	0554	1258	704
.486	306.1963	2669	3374	4079	4785	5491	6197	6903	7609	8315	706
.487	9022	9729	0436	1143	1850	2557	3265	3973	4681	5389	707
.488	307.6097	6805	7514	8222	8931	9640	0350	1059	1768	2478	709
.489	308.3188	3898	4608	5318	6029	6740	7450	8161	8873	9584	711
.490	309.0295	1007	1719	2431	3143	3855	4568	5280	5993	6706	712
.491	7419	8133	8846	9560	0273	0987	1701	2416	3130	3845	714
.492	310.4560	5275	5990	6705	7420	8136	8852	9568	0284	1000	716
.493	311.1716	2433	3150	3867	4584	5301	6018	6736	7454	8172	717
.494	8890	9608	0326	1045	1764	2482	3201	3921	4640	5360	719
.495	312.6079	6799	7519	8240	8960	9680	0401	1122	1843	2564	721
.496	313.3286	4007	4729	5451	6173	6895	7618	8340	9063	9786	722
.497	314.0509	1232	1955	2679	3403	4126	4850	5575	6299	7024	724
.498	7748	8473	9198	9923	0649	1374	2100	2826	3552	4278	726
.499	315.5005	5731	6458	7185	7912	8639	9366	0094	0822	1550	727
.500	316.2278	3006	3734	4463	5192	5920	6650	7379	8108	8838	729
.501	9567	0297	1027	1758	2488	3219	3949	4680	5411	6143	731
.502	317.6874	7606	8337	9069	9801	0534	1266	1999	2731	3464	732
.503	318.4198	4931	5664	6398	7132	7866	8600	9334	0068	0803	734
.504	319.1538	2273	3008	3743	4479	5214	5950	6686	7422	8159	736
.505	8895	9632	0369	1106	1843	2580	3318	4055	4793	5531	737
.506	320.6269	7008	7746	8485	9224	9963	0702	1441	2181	2921	739
.507	321.3661	4401	5141	5881	6622	7363	8103	8845	9586	0327	741
.508	322.1069	1811	2552	3295	4037	4779	5522	6265	7008	7751	743
.509	8494	9238	9981	0725	1469	2213	2958	3702	4447	5192	744
.510	323.5937	6682	7427	8173	8918	9664	0410	1156	1903	2649	746
.511	324.3396	4143	4890	5637	6385	7132	7880	8628	9376	0125	748
.512	325.0873	1622	2370	3119	3869	4618	5367	6117	6867	7617	749
.513	8367	9117	9868	0619	1369	2121	2872	3623	4375	5126	751
.514	326.5878	6630	7383	8135	8888	9640	0393	1147	1900	2653	753
.515	327.3407	4161	4915	5669	6423	7178	7932	8687	9442	0198	755
.516	328.0953	1708	2464	3220	3976	4732	5489	6245	7002	7759	755
.517	8516	9274	0031	0789	1547	2305	3063	3821	4580	5338	758
.518	329.6097	6856	7615	8375	9134	9894	0654	1414	2174	2935	760
.519	330.3695	4456	5217	5978	6740	7501	8263	9025	9787	0549	762
.520	331.1311	2074	2836	3599	4362	5126	5889	6653	7416	8180	763
.521	8945	9709	0473	1238	2003	2768	3533	4298	5064	5830	765
.522	332.6596	7362	8128	8894	9661	0428	1195	1962	2729	3496	767
.523	333.4264	5032	5800	6568	7337	8105	8874	9643	0412	1181	769
.524	334.1950	2720	3490	4260	5030	5800	6571	7341	8112	8883	770
.525	9654	0426	1197	1969	2741	3513	4285	5058	5830	6603	772
.526	335.7376	8149	8923	9696	0470	1244	2018	2792	3566	4341	774
.527	336.5116	5891	6666	7441	8217	8992	9768	0544	1320	2097	776
.528	337.2873	3650	4427	5204	5981	6758	7536	8314	9092	9870	778
.529	338.0648	1427	2206	2984	3763	4543	5322	6102	6881	7661	779
.530	8442	9222	0002	0783	1564	2345	3126	3907	4689	5471	781
.531	339.6253	7035	7817	8600	9382	0165	0948	1731	2515	3298	783
.532	340.4082	4866	5650	6434	7219	8003	8788	9573	0358	1144	785
.533	341.1929	2715	3501	4287	5073	5860	6646	7433	8220	9007	787
.534	9794	0582	1370	2158	2946	3734	4522	5311	6100	6889	788
.535	342.7678	8467	9257	0046	0836	1626	2417	3207	3998	4788	790
.536	343.5579	6371	7162	7954	8745	9537	0329	1121	1914	2707	792
.537	344.3499	4292	5085	5879	6672	7466	8260	9054	9848	0643	794
.538	345.1437	2232	3027	3822	4618	5413	6209	7005	7801	8597	796
.539	9394	0190	0987	1784	2581	3379	4176	4974	5772	6570	797
Log.	0	1	2	3	4	5	6	7	8	9	Dif

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.540	346.7369	8167	8966	9765	0564	1363	2162	2962	3762	4561	799
.541	347.5362	6162	6962	7763	8564	9365	0166	0968	1769	2571	801
.542	348.3373	4175	4978	5780	6583	7386	8189	8992	9796	0599	803
.543	349.1403	2207	3011	3816	4620	5425	6230	7035	7840	8646	805
.544	9452	0258	1064	1870	2676	3483	4290	5097	5904	6711	807
.545	350.7519	8326	9134	9942	0751	1559	2368	3177	3986	4795	809
.546	351.5604	6414	7224	8034	8844	9654	0465	1275	2086	2897	810
.547	352.3709	4520	5332	6144	6956	7768	8580	9393	0206	1019	812
.548	353.1832	2645	3459	4272	5086	5900	6714	7529	8344	9158	814
.549	9973	0789	1604	2420	3235	4051	4867	5684	6500	7317	816
.550	354.8134	8951	9768	0586	1403	2221	3039	3857	4676	5494	818
.551	355.6313	7132	7951	8771	9590	0410	1230	2050	2870	3691	820
.552	356.4511	5332	6153	6974	7796	8617	9439	0261	1083	1906	822
.553	357.2728	3551	4374	5197	6021	6844	7668	8492	9316	0140	824
.554	358.0964	1789	2614	3439	4264	5089	5915	6741	7567	8393	826
.555	9219	0046	0873	1700	2527	3354	4181	5009	5837	6665	827
.556	359.7493	8322	9150	9979	0808	1638	2467	3297	4126	4956	829
.557	360.5786	6617	7447	8278	9109	9940	0771	1603	2435	3267	831
.558	361.4099	4931	5763	6596	7429	8262	9095	9929	0762	1596	833
.559	362.2430	3264	4099	4933	5768	6603	7438	8273	9109	9945	835
.560	363.0781	1617	2453	3289	4126	4963	5800	6637	7475	8313	837
.561	9150	9988	0827	1665	2504	3343	4182	5021	5860	6700	839
.562	364.7539	8379	9220	0060	0901	1741	2582	3423	4265	5106	841
.563	365.5948	6790	7632	8474	9317	0159	1002	1845	2689	3532	843
.564	366.4376	5220	6064	6908	7752	8597	9442	0287	1132	1977	845
.565	367.2823	3669	4515	5361	6207	7054	7901	8748	9595	0442	847
.566	368.1290	2137	2985	3834	4682	5530	6379	7228	8077	8926	849
.567	9776	0626	1476	2326	3176	4026	4877	5728	6579	7430	851
.568	369.8282	9133	9985	0837	1690	2542	3395	4248	5101	5954	853
.569	370.6807	7661	8515	9369	0223	1077	1932	2787	3642	4497	855
.570	371.5352	6208	7064	7920	8776	9632	0489	1346	2203	3060	856
.571	372.3917	4775	5632	6490	7348	8207	9065	9924	0783	1642	858
.572	373.2502	3361	4221	5081	5941	6801	7662	8523	9383	0245	860
.573	374.1106	1967	2829	3691	4553	5415	6278	7141	8004	8867	862
.574	9730	0594	1457	2321	3185	4050	4914	5779	6644	7509	864
.575	375.8374	9240	0105	0971	1837	2704	3570	4437	5304	6171	866
.576	376.7038	7905	8773	9641	0509	1377	2246	3115	3984	4853	868
.577	377.5722	6591	7461	8331	9201	0071	0942	1813	2683	3555	870
.578	378.4426	5297	6169	7041	7913	8785	9658	0531	1403	2277	872
.579	379.3150	4023	4897	5771	6645	7519	8394	9269	0144	1019	874
.580	380.1894	2769	3645	4521	5397	6274	7150	8027	8904	9781	876
.581	381.0658	1536	2414	3291	4170	5048	5926	6805	7684	8563	878
.582	9443	0322	1202	2082	2962	3843	4723	5604	6485	7366	880
.583	382.8247	9129	0011	0893	1775	2657	3540	4423	5306	6189	883
.584	383.7072	7956	8840	9724	0608	1493	2377	3262	4147	5032	885
.585	384.5918	6803	7689	8575	9462	0348	1235	2122	3009	3896	887
.586	385.4784	5671	6559	7447	8336	9224	0113	1002	1891	2780	889
.587	386.3670	4560	5449	6340	7230	8121	9011	9902	0793	1685	891
.588	387.2576	3468	4360	5252	6145	7037	7930	8823	9717	0610	893
.589	388.1504	2398	3292	4186	5080	5975	6870	7765	8660	9556	895
.590	389.0451	1347	2243	3140	4036	4933	5830	6727	7625	8522	897
.591	9420	0318	1216	2114	3013	3912	4811	5710	6609	7509	899
.592	390.8409	9309	0209	1110	2010	2911	3812	4714	5615	6517	901
.593	391.7419	8321	9223	0126	1029	1931	2835	3738	4642	5545	903
.594	392.6449	7354	8258	9163	0067	0972	1878	2783	3689	4595	905
.595	393.5501	6407	7314	8220	9127	0034	0942	1849	2757	3665	907
.596	394.4573	5481	6390	7299	8208	9117	0026	0936	1846	2756	909
.597	395.3666	4577	5487	6398	7309	8221	9132	0044	0956	1868	911
.598	396.2780	3693	4606	5519	6432	7345	8259	9173	0087	1001	914
.599	397.1915	2830	3745	4660	5575	6491	7407	8323	9230	0155	916
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Numbers to Briggs's Logarithms.

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.600	398.1072	1988	2905	3823	4740	5658	6576	7494	8412	9330	918
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.602	9447	0369	1290	2211	3133	4055	4977	5899	6822	7744	923
.603	400.8667	9590	0514	1437	2361	3285	4209	5134	6058	6983	924
.604	401.7908	8833	9759	0685	1610	2537	3463	4389	5316	6243	926
.605	402.7170	8098	9025	9953	0881	1809	2738	3667	4596	5525	928
.606	403.6454	7383	8313	9243	0173	1104	2034	2965	3896	4827	931
.607	404.5759	6691	7622	8555	9487	0419	1352	2285	3218	4152	933
.608	405.5085	6019	6953	7887	8822	9757	0692	1627	2562	3498	935
.609	406.4433	5369	6305	7242	8178	9115	0052	0990	1927	2865	937
.610	407.3803	4741	5679	6618	7557	8496	9435	0374	1314	2254	939
.611	408.3194	4134	5075	6015	6956	7898	8839	9781	0722	1664	941
.612	409.2607	3549	4492	5435	6378	7321	8265	9208	0152	1097	943
.613	410.2041	2986	3931	4876	5821	6766	7712	8658	9604	0551	946
.614	411.1497	2444	3391	4338	5286	6233	7181	8130	9078	0026	948
.615	412.0975	1924	2873	3823	4772	5722	6672	7623	8573	9524	950
.616	413.0475	1426	2378	3329	4281	5233	6185	7138	8091	9044	952
.617	9997	0950	1901	2858	3812	4766	5720	6675	7630	8585	954
.618	414.9540	0496	1452	2408	3364	4321	5277	6234	7191	8149	957
.619	415.9106	0064	1022	1980	2939	3897	4856	5815	6775	7734	959
.620	416.8694	9654	0614	1574	2535	3496	4457	5418	6380	7342	961
.621	417.8304	9266	0228	1191	2154	3117	4080	5044	6007	6971	963
.622	418.7935	8900	9865	0830	1795	2760	3725	4691	5657	6623	965
.623	419.7590	8556	9523	0490	1458	2425	3393	4361	5329	6298	968
.624	420.7266	8235	9204	0174	1143	2113	3083	4053	5023	5994	970
.625	421.6965	7936	8907	9879	0851	1823	2795	3767	4740	5713	972
.626	422.6686	7659	8633	9607	0581	1555	2530	3504	4479	5454	974
.627	423.6430	7405	8381	9357	0333	1310	2286	3263	4241	5218	977
.628	424.6196	7173	8152	9130	0108	1087	2066	3045	4025	5004	979
.629	425.5984	6964	7945	8925	9906	0887	1868	2849	3831	4813	981
.630	426.5795	6778	7760	8743	9726	0709	1693	2676	3660	4644	983
.631	427.5629	6613	7598	8583	9569	0554	1540	2526	3512	4499	986
.632	428.5485	6472	7459	8447	9434	0422	1410	2398	3387	4375	988
.633	429.5364	6353	7343	8332	9322	0312	1303	2293	3284	4275	990
.634	430.5266	6258	7249	8241	9233	0226	1218	2211	3204	4197	992
.635	431.5191	6184	7178	8173	9167	0162	1157	2152	3147	4143	995
.636	432.5138	6134	7131	8127	9124	0121	1118	2115	3113	4111	997
.637	433.5109	6107	7106	8104	9103	0103	1102	2102	3102	4101	999
.638	434.5102	6103	7104	8105	9106	0108	1109	2111	3114	4116	
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.640	43.65158	66164	67169	68175	69181	70187	71193	72200	73207	74214
.641	75221	76229	77236	78244	79253	80261	81270	82279	83288	84297
.642	85307	86317	87327	88337	89348	90359	91370	92381	93392	94401
.643	95416	96428	97441	98453	99466	00479	01493	02506	03520	04534
.644	44.05549	06563	07578	08593	09608	10624	11639	12655	13671	14688
.645	15704	16721	17738	18756	19773	20791	21809	22827	23846	24865
.646	25884	26903	27922	28942	29962	30982	32003	33023	34044	35065
.647	36086	37108	38130	39152	40174	41197	42219	43242	44266	45289
.648	46313	47337	48361	49385	50410	51435	52460	53485	54511	55536
.649	56562	57589	58615	59642	60669	61696	62724	63751	64779	65808
.650	66836	67865	68893	69923	70952	71982	73011	74041	75072	76102
.651	77133	78164	79195	80227	81259	82291	83323	84355	85388	86421
.652	87454	88487	89521	90555	91589	92623	93658	94693	95728	96763
.653	97799	98834	99870	00907	01943	02980	04017	05054	06091	07129
.654	45.08167	09205	10244	11282	12321	13360	14400	15439	16479	17519
.655	18559	19600	20641	21682	22723	23765	24806	25848	26891	27933
.656	28976	30019	31062	32105	33149	34193	35237	36282	37326	38371
.657	39416	40462	41507	42553	43599	44645	45692	46739	47786	48833
.658	49881	50928	51976	53025	54073	55122	56171	57220	58270	59319
.659	60369	61419	62470	63520	64571	65623	66674	67726	68777	69830

Log.	0	1	2	3	4	5	6	7	8	9
.660	45.70882	71935	72987	74040	75094	76147	77201	78255	79310	80364
.661	81419	82474	83529	84585	85640	86696	87753	88809	89866	90923
.662	91930	93038	94095	95153	96211	97270	98329	99387	00447	01506
.663	46.02566	03626	04686	05746	06807	07868	08929	09990	11052	12114
.664	13176	14238	15301	16364	17427	18490	19553	20617	21681	22746
.665	23810	24875	25940	27005	28071	29137	30203	31269	32335	33402
.666	34469	35536	36604	37672	38740	39808	40876	41945	43014	44083
.667	45153	46222	47292	48363	49433	50504	51575	52646	53717	54789
.668	55861	56933	58006	59078	60151	61224	62298	63371	64445	65519
.669	66594	67668	68743	69818	70894	71970	73045	74122	75198	76275
.670	77351	78429	79506	80583	81661	82740	83818	84896	85975	87054
.671	88134	89213	90293	91373	92454	93534	94615	95696	96778	97859
.672	98941	00023	01106	02188	03271	04354	05437	06521	07605	08689
.673	47.09773	10858	11943	13028	14113	15199	16285	17371	18457	19544
.674	20630	21718	22805	23892	24980	26068	27157	28245	29334	30423
.675	31513	32602	33692	34782	35872	36963	38054	39145	40236	41328
.676	42420	43512	44604	45697	46790	47883	48976	50070	51164	52258
.677	53352	54447	55542	56637	57732	58828	59924	61020	62116	63213
.678	64310	65407	66504	67602	68700	69798	70897	71995	73094	74193
.679	75293	76392	77492	78593	79693	80794	81895	82996	84097	85199
.680	86301	87403	88506	89608	90711	91815	92918	94022	95126	96230
.681	97334	98439	99544	00650	01755	02861	03967	05073	06180	07286
.682	48.08393	09501	10608	11716	12824	13933	15041	16150	17259	18368
.683	19478	20588	21698	22808	23919	25030	26141	27252	28364	29476
.684	30588	31700	32813	33926	35039	36153	37266	38380	39494	40609
.685	41724	42839	43954	45069	46185	47301	48417	49534	50651	51768
.686	52885	54003	55120	56238	57357	58475	59594	60713	61833	62952
.687	64072	65192	66313	67433	68554	69675	70797	71918	73040	74162
.688	75285	76408	77531	78654	79777	80901	82025	83149	84274	85399
.689	86524	87649	88774	89900	91026	92153	93279	94406	95533	96661
.690	97788	98916	00044	01173	02301	03430	04559	05689	06819	07949
.691	49.09079	10209	11340	12471	13602	14734	15866	16998	18130	19263
.692	20395	21528	22662	23795	24929	26063	27198	28332	29467	30603
.693	31738	32874	34010	35146	36282	37419	38556	39693	40831	41969
.694	43107	44245	45384	46523	47662	48801	49941	51081	52221	53361
.695	54502	55643	56784	57926	59067	60209	61351	62494	63637	64780
.696	65923	67067	68211	69355	70499	71644	72789	73934	75079	76225
.697	77371	78517	79664	80810	81957	83105	84252	85400	86548	87696
.698	88845	89994	91143	92292	93442	94592	95742	96892	98043	99194
.699	50.00345	01497	02649	03801	04953	06106	07258	08411	09565	10718
.700	11872	13026	14181	15336	16491	17646	18801	19957	21113	22269
.701	23426	24583	25740	26897	28055	29213	30371	31529	32688	33847
.702	35006	36166	37325	38485	39646	40806	41967	43128	44289	45451
.703	46613	47775	48938	50100	51263	52426	53590	54754	55918	57082
.704	58247	59411	60577	61742	62908	64073	65240	66406	67573	68740
.705	69907	71075	72242	73410	74579	75747	76916	78085	79255	80424
.706	81594	82765	83935	85106	86277	87448	88620	89792	90964	92136
.707	93309	94482	95655	96828	98002	99176	00350	01525	02700	03875
.708	51.05050	06226	07402	08578	09754	10931	12108	13285	14463	15640
.709	16818	17997	19175	20354	21533	22713	23892	25072	26253	27433
.710	28614	29795	30976	32158	33340	34522	35704	36887	38070	39253
.711	40437	41620	42804	43989	45173	46358	47543	48729	49914	51100
.712	52286	53473	54660	55847	57034	58222	59410	60598	61786	62975
.713	64164	65353	66542	67732	68922	70113	71303	72494	73685	74877
.714	76068	77260	78453	79645	80838	82031	83224	84418	85612	86806
.715	88000	89195	90390	91585	92781	93977	95173	96369	97566	98763
.716	99960	01157	02355	03553	04752	05950	07149	08348	09547	10747
.717	52.11947	13147	14348	15549	16750	17951	19153	20355	21557	22759
.718	23962	25165	26368	27572	28776	29980	31184	32389	33594	34799
.719	36004	37210	38416	39623	40829	42036	43243	44451	45658	46866
Log.	0	1	2	3	4	5	6	7	8	9

Numbers to Briggs's Logarithms.

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Log.	0	1	2	3	4	5	6	7	8	9
.720	52.48075	49283	50492	51701	52910	54120	55330	56540	57751	58962
.721	60173	61384	62596	63808	65020	66232	67445	68658	69871	71085
.722	72299	73513	74727	75942	77157	78372	79588	80803	82019	83236
.723	84453	85669	86887	88104	89322	90540	91758	92977	94196	95415
.724	96634	97854	99074	00294	01515	02736	03957	05178	06400	07622
.725	53.08844	10067	11290	12513	13736	14960	16184	17408	18633	19858
.726	21083	22308	23534	24760	25986	27212	28439	29666	30893	32121
.727	33349	34577	35806	37034	38263	39493	40722	41952	43182	44413
.728	45644	46875	48106	49338	50569	51802	53034	54267	55500	56733
.729	57967	59200	60435	61669	62904	64139	65374	66610	67845	69082
.730	70318	71555	72792	74029	75266	76504	77742	78981	80220	81459
.731	82698	83937	85177	86417	87658	88898	90139	91381	92622	93864
.732	95106	96349	97591	98834	00078	01321	02565	03809	05054	06298
.733	54.07543	08789	10034	11280	12526	13772	15019	16266	17513	18761
.734	20009	21257	22505	23754	25003	26253	27502	28752	30002	31253
.735	32503	33754	35006	36257	37509	38761	40014	41267	42520	43773
.736	45027	46280	47535	48789	50044	51299	52554	53810	55066	56322
.737	57579	58835	60092	61350	62608	63865	65124	66382	67641	68900
.738	70160	71419	72679	73940	75200	76461	77722	78984	80245	81507
.739	82770	84032	85295	86558	87822	89086	90350	91614	92879	94144
.740	95409	96674	97940	99206	00473	01739	03006	04273	05541	06809
.741	55.08077	09345	10614	11883	13152	14422	15692	16962	18233	19503
.742	20774	22046	23317	24589	25862	27134	28407	29680	30953	32227
.743	33501	34775	36050	37325	38600	39875	41151	42427	43704	44980
.744	46257	47534	48812	50090	51368	52646	53925	55204	56483	57763
.745	59043	60323	61603	62884	64165	65446	66728	68010	69292	70575
.746	71857	73141	74424	75708	76992	78276	79561	80846	82131	83416
.747	84702	85988	87274	88561	89848	91135	92423	93711	94999	96281
.748	97576	98865	00154	01444	02734	04024	05315	06606	07897	09188
.749	56.10480	11772	13064	14357	15650	16943	18236	19530	20824	22119
.750	23413	24708	26004	27299	28595	29891	31188	32484	33782	35079
.751	36377	37675	38973	40271	41570	42869	44169	45469	46769	48069
.752	49370	50671	51972	53274	54575	55878	57180	58483	59786	61089
.753	62393	63697	65001	66306	67611	68916	70221	71527	72833	74139
.754	75446	76753	78060	79368	80676	81984	83292	84601	85910	87220
.755	88529	89839	91150	92460	93771	95082	96394	97706	99018	00330
.756	57.01643	02956	04269	05583	06897	08211	09525	10840	12155	13471
.757	14786	16102	17419	18735	20052	21370	22687	24005	25323	26642
.758	27960	29279	30599	31918	33238	34559	35879	37200	38521	39843
.759	41165	42487	43809	45132	46455	47778	49102	50426	51750	53075
.760	54399	55725	57050	58376	59702	61028	62355	63682	65009	66337
.761	67665	68993	70321	71650	72979	74309	75638	76969	78299	79630
.762	80960	82292	83623	84955	86287	87620	88953	90286	91619	92953
.763	94287	95621	96956	98291	99626	00962	02298	03634	04970	06307
.764	58.07644	08982	10319	11657	12996	14334	15673	17013	18352	19692
.765	21032	22373	23713	25055	26396	27738	29080	30422	31765	33108
.766	34451	35795	37139	38483	39827	41172	42517	43863	45208	46554
.767	47901	49248	50595	51942	53289	54637	55986	57334	58683	60032
.768	61382	62731	64082	65432	66783	68134	69485	70837	72189	73541
.769	74894	76246	77600	78953	80307	81661	83016	84370	85725	87081
.770	88437	89793	91149	92506	93863	95220	96577	97935	99293	00652
.771	59.02011	03370	04729	06089	07449	08810	10170	11531	12893	14254
.772	15616	16979	18341	19704	21067	22431	23795	25159	26523	27888
.773	29253	30619	31984	33350	34717	36083	37450	38818	40185	41553
.774	42922	44290	45659	47028	48398	49768	51138	52508	53879	55250
.775	56621	57993	59365	60738	62110	63483	64856	66230	67604	68978
.776	70353	71728	73103	74478	75854	77230	78607	79984	81361	82738
.777	84116	85494	86872	88251	89630	91009	92389	93769	95149	96530
.778	97911	99292	00674	02055	03438	04820	06203	07586	08970	10353
.779	60.11737	13122	14507	15892	17277	18663	20049	21435	22822	24209
Log.	0	1	2	3	4	5	6	7	8	9

Log.	0	1	2	3	4	5	6	7	8	9
.780	60. 25596	26983	28371	29760	31148	32537	33926	35316	36706	38096
.781	39486	40877	42268	43660	45051	46444	47836	49229	50622	52015
.782	53409	54803	56197	57592	58987	60382	61778	63174	64570	65966
.783	67363	68761	70158	71556	72954	74353	75751	77151	78550	79950
.784	81350	82750	84151	85552	86954	88355	89758	91160	92563	93966
.785	95369	96773	98177	99581	00986	02391	03796	05201	06607	08014
.786	61. 09420	10827	12234	13642	15050	16458	17867	19275	20685	22094
.787	23504	24914	26325	27735	29146	30558	31970	33382	34794	36207
.788	37620	39033	40447	41861	43276	44690	46105	47521	48936	50352
.789	51769	53185	54602	56020	57437	58855	60274	61692	63111	64530
.790	65950	67370	68790	70211	71632	73053	74474	75896	77319	78741
.791	80164	81587	83011	84435	85859	87283	88708	90133	91559	92985
.792	94411	95837	97264	98691	00119	01546	02975	04403	05832	07261
.793	62. 08690	10120	11550	12981	14411	15842	17274	18706	20138	21570
.794	23003	24436	25869	27303	28737	30171	31606	33041	34477	35912
.795	37348	38785	40221	41658	43096	44534	45972	47410	48849	50288
.796	51727	53167	54607	56047	57488	58929	60370	61812	63254	64696
.797	66139	67582	69025	70469	71913	73357	74802	76247	77692	79138
.798	80584	82030	83477	84924	86371	87819	89267	90715	92164	93613
.799	95062	96511	97961	99412	00862	02313	03765	05216	06668	08121
.800	63. 09573	11026	12480	13933	15387	16842	18296	19751	21207	22662
.801	24119	25575	27032	28489	29946	31404	32862	34320	35779	37238
.802	38697	40157	41617	43077	44538	45999	47460	48922	50384	51847
.803	53309	54772	56236	57700	59164	60628	62093	63558	65023	66489
.804	67955	69422	70888	72356	73823	75291	76759	78227	79696	81165
.805	82635	84105	85575	87045	88516	89987	91459	92931	94403	95875
.806	97348	98822	00295	01769	03243	04718	06193	07668	09144	10619
.807	64. 12096	13572	15049	16527	18004	19482	20961	22439	23918	25398
.808	26877	28357	29838	31318	32799	34281	35762	37244	38727	40210
.809	41693	43176	44660	46144	47628	49113	50598	52084	53570	55056
.810	56542	58029	59516	61004	62492	63980	65468	66957	68447	69936
.811	71426	72916	74407	75898	77389	78881	80373	81865	83358	84851
.812	86344	87838	89332	90826	92321	93816	95312	96808	98304	99800
.813	65. 01297	02794	04292	05789	07288	08786	10285	11784	13284	14784
.814	16284	17785	19285	20787	22288	23790	25293	26795	28298	29802
.815	31306	32810	34314	35819	37324	38829	40335	41841	43348	44855
.816	46362	47869	49377	50885	52394	53903	55412	56922	58432	59942
.817	61453	62964	64475	65987	67499	69011	70524	72037	73550	75064
.818	76578	78093	79608	81123	82638	84154	85671	87187	88704	90221
.819	91739	93257	94775	96294	97813	99332	00852	02372	03893	05413
.820	66. 06934	08456	09978	11500	13022	14545	16069	17592	19116	20640
.821	22165	23690	25215	26741	28267	29793	31320	32847	34375	35903
.822	37431	38959	40488	42017	43547	45077	46607	48138	49669	51200
.823	52732	54264	55796	57329	58862	60395	61929	63463	64998	66532
.824	68068	69603	71139	72675	74212	75749	77286	78824	80362	81900
.825	83439	84978	86518	88058	89598	91138	92679	94220	95762	97304
.826	98846	00389	01932	03475	05019	06563	08107	09652	11197	12743
.827	67. 14289	15835	17381	18928	20475	22023	23571	25119	26668	28217
.828	29767	31316	32866	34417	35968	37519	39071	40622	42175	43727
.829	45280	46834	48387	49941	51496	53051	54606	56161	57717	59273
.830	60830	62387	63944	65502	67060	68618	70177	71736	73295	74855
.831	76415	77976	79536	81098	82659	84221	85784	87346	88909	90473
.832	92036	93600	95165	96730	98295	99860	01426	02993	04559	06126
.833	68. 07694	09261	10829	12398	13967	15536	17105	18675	20245	21816
.834	23387	24958	26530	28102	29674	31247	32820	34394	35968	37542
.835	39116	40691	42267	43842	45418	46995	48572	50149	51726	53304
.836	54882	56461	58040	59619	61199	62779	64359	65940	67521	69103
.837	70684	72267	73849	75432	77015	78599	80183	81768	83352	84937
.838	86523	88109	89695	91282	92869	94456	96044	97632	99220	00809
.839	69. 02398	03988	05577	07168	08758	10349	11941	13532	15124	16717
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Numbers to Briggs's Logarithms.

91

Log	0	1	2	3	4	5	6	7	8	9
.840	69.18310	19903	21496	23090	24685	26279	27874	29470	31065	32662
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.842	50243	51844	53445	55046	56648	58250	59852	61455	63058	64661
.843	66265	67869	69474	71079	72684	74290	75896	77502	79109	80716
.844	82324	83932	85540	87149	88758	90367	91977	93587	95198	96809
.845	98420	00032	01644	03256	04869	06482	08095	09709	11323	12938
.846	70.14553	16168	17784	19400	21017	22633	24251	25868	27486	29105
.847	30723	32342	33962	35582	37202	38822	40443	42065	43686	45308
.848	46931	48553	50177	51800	53424	55048	56673	58298	59924	61549
.849	63176	64802	66429	68056	69684	71312	72940	74569	76198	77828
.850	79458	81088	82719	84350	85981	87613	89245	90878	92511	94144
.851	95778	97412	99046	00681	02316	03952	05588	07224	08861	10498
.852	71.12135	13773	15411	17050	18689	20328	21968	23608	25248	26889
.853	28530	30172	31814	33456	35099	36742	38386	40029	41674	43318
.854	44963	46609	48254	49901	51547	53194	54841	56489	58137	59785
.855	61434	63083	64733	66383	68033	69684	71335	72986	74638	76290
.856	77943	79596	81249	82903	84557	86212	87866	89522	91177	92833
.857	94490	96147	97804	99461	01119	02778	04436	06096	07755	09415
.858	72.11075	12735	14396	16058	17719	19382	21044	22707	24370	26034
.859	27698	29362	31027	32692	34358	36024	37690	39357	41024	42692
.860	44360	46028	47697	49366	51035	52705	54375	56046	57717	59388
.861	61060	62732	64404	66077	67750	69424	71098	72772	74447	76122
.862	77798	79474	81150	82827	84504	86182	87860	89538	91217	92896
.863	94575	96255	97935	99616	01297	02978	04660	06342	08025	09708
.864	73.11391	13075	14759	16443	18128	19813	21499	23185	24871	26558
.865	28245	29933	31621	33309	34998	36687	38377	40067	41757	43448
.866	45139	46830	48522	50214	51907	53600	55293	56987	58681	60376
.867	62071	63766	65462	67158	68855	70552	72250	73947	75645	77343
.868	79042	80742	82441	84141	85842	87543	89244	90946	92648	94350
.869	96053	97756	99460	01164	02868	04573	06278	07983	09689	11396
.870	74.13102	14810	16517	18225	19933	21642	23351	25061	26770	28481
.871	30191	31902	33614	35326	37038	38751	40464	42177	43891	45605
.872	47320	49035	50750	52466	54182	55899	57616	59333	61051	62769
.873	64488	66207	67926	69646	71366	73086	74807	76529	78250	79972
.874	81695	83418	85141	86865	88589	90314	92038	93764	95489	97216
.875	98942	00669	02396	04124	05852	07581	09309	11039	12768	14498
.876	75.16229	17960	19691	21423	23155	24887	26620	28353	30087	31821
.877	33556	35291	37026	38761	40497	42234	43971	45708	47446	49184
.878	50922	52661	54400	56140	57880	59621	61361	63103	64844	66586
.879	68329	70072	71815	73559	75303	77047	78792	80537	82283	84029
.880	85776	87523	89270	91018	92766	94514	96263	98012	99762	01512
.881	76.03263	05014	06765	08517	10269	12021	13774	15528	17281	19036
.882	20790	22545	24300	26056	27812	29569	31326	33083	34841	36599
.883	38358	40117	41876	43636	45396	47157	48918	50679	52441	54203
.884	55966	57729	59493	61256	63021	64785	66550	68316	70082	71848
.885	73615	75382	77150	78917	80686	82455	84224	85993	87763	89534
.886	91304	93076	94847	96619	98392	00164	01938	03711	05485	07260
.887	77.09035	10810	12586	14362	16138	17915	19692	21470	23248	25027
.888	26806	28585	30365	32145	33926	35707	37488	39270	41052	42835
.889	44618	46401	48185	49970	51754	53539	55325	57111	58897	60684
.890	62471	64259	66047	67835	69624	71413	73203	74993	76783	78574
.891	80366	82157	83949	85742	87535	89328	91122	92916	94711	96506
.892	98301	00097	01893	03690	05487	07284	09082	10881	12679	14478
.893	78.16278	18078	19878	21679	23480	25282	27084	28887	30689	32493
.894	34296	36101	37905	39710	41515	43321	45127	46934	48741	50548
.895	52356	54165	55973	57782	59592	61402	63212	65023	66834	68646
.896	70458	72270	74083	75896	77710	79524	81339	83154	84969	86785
.897	88601	90418	92235	94052	95870	97688	99507	01326	03146	04966
.898	79.06786	08607	10428	12250	14072	15895	17717	19541	21365	23189
.899	25013	26838	28664	30490	32316	34143	35970	37797	39625	41454
Log	0	1	2	3	4	5	6	7	8	9

Log.	0	1	2	3	4	5	6	7	8	9
.900	79. 43282	45112	46941	48771	50602	52433	54264	56096	57928	59760
.901	61594	63427	65261	67095	68930	70765	72600	74436	76273	78110
.902	79947	81785	83623	85461	87300	89139	90979	92819	94660	96501
.903	98343	00184	02027	03870	05713	07556	09400	11245	13090	14935
.904	80. 16781	18627	20473	22320	24168	26016	27864	29713	31562	33411
.905	35261	37112	38962	40814	42665	44517	46370	48223	50076	51930
.906	53784	55639	57494	59350	61206	63062	64919	66776	68634	70492
.907	72350	74209	76069	77928	79789	81649	83510	85372	87234	89096
.908	90959	92822	94686	96550	98414	00279	02145	04011	05877	07743
.909	81. 09611	11478	13346	15214	17083	18952	20822	22692	24563	26434
.910	28305	30177	32049	33922	35795	37669	39543	41417	43292	45167
.911	47043	48919	50796	52673	54550	56428	58306	60185	62064	63944
.912	65824	67704	69585	71466	73348	75230	77113	78996	80880	82764
.913	84648	86533	88418	90304	92190	94076	95963	97851	99738	01627
.914	82. 03515	05405	07294	09184	11075	12966	14857	16749	18641	20533
.915	22426	24320	26214	28108	30003	31898	33794	35690	37587	39484
.916	41381	43279	45177	47076	48975	50875	52775	54675	56576	58478
.917	60379	62282	64184	66088	67991	69895	71800	73704	75610	77515
.918	79422	81328	83235	85143	87051	88959	90868	92777	94687	96597
.919	98508	00419	02330	04242	06154	08067	09980	11894	13808	15723
.920	83. 17638	19553	21469	23385	25302	27219	29137	31055	32973	34892
.921	36812	38732	40652	42573	44494	46415	48338	50260	52183	54106
.922	56030	57954	59879	61804	63730	65656	67582	69509	71437	73365
.923	75293	77222	79151	81080	83010	84941	86872	88803	90735	92667
.924	94600	96533	98467	00401	02335	04270	06205	08141	10078	12014
.925	84. 13951	15889	17827	19766	21705	23644	25584	27524	29465	31406
.926	33348	35290	37232	39175	41119	43062	45007	46951	48897	50842
.927	52788	54735	56682	58629	60577	62526	64474	66424	68373	70324
.928	72274	74225	76177	78129	80081	82034	83987	85941	87895	89850
.929	91805	93760	95716	97673	99630	01587	03545	05503	07462	09421
.930	85. 11380	13340	15301	17262	19223	21185	23147	25110	27073	29037
.931	31001	32966	34931	36896	38862	40828	42795	44763	46730	48698
.932	50667	52636	54606	56576	58546	60517	62488	64460	66433	68405
.933	70378	72352	74326	76301	78276	80251	82227	84203	86180	88157
.934	90135	92113	94092	96071	98051	00031	02011	03992	05973	07955
.935	86. 09938	11920	13903	15887	17871	19856	21841	23826	25812	27799
.936	29785	31773	33761	35749	37737	39727	41716	43706	45697	47688
.937	49679	51671	53663	55656	57650	59643	61637	63632	65627	67623
.938	69619	71615	73612	75610	77607	79606	81605	83604	85604	87604
.939	89604	91605	93607	95609	97611	99614	01618	03622	05626	07631
.940	87. 09636	11642	13648	15654	17661	19669	21677	23685	25694	27704
.941	29714	31724	33735	35746	37758	39770	41783	43796	45809	47823
.942	49838	51853	53868	55884	57900	59917	61934	63952	65970	67989
.943	70008	72028	74048	76068	78089	80111	82133	84155	86178	88201
.944	90225	92249	94274	96299	98325	00351	02378	04405	06432	08460
.945	88. 10489	12518	14547	16577	18607	20638	22669	24701	26733	28766
.946	30799	32833	34867	36901	38936	40972	43008	45044	47081	49118
.947	51156	53194	55233	57272	59312	61352	63393	65434	67476	69518
.948	71560	73603	75647	77690	79735	81780	83825	85871	87917	89964
.949	92011	94059	96107	98156	00205	02254	04304	06355	08406	10457
.950	89. 12509	14562	16615	18668	20722	22776	24831	26886	28942	30998
.951	33055	35112	37170	39228	41286	43345	45405	47465	49525	51586
.952	53618	55710	57772	59835	61898	63962	66026	68091	70156	72222
.953	74288	76355	78422	80489	82557	84626	86695	88764	90834	92905
.954	94976	97047	99119	01191	03264	05338	07411	09486	11560	13636
.955	90. 15711	17788	19864	21941	24019	26097	28176	30255	32334	34414
.956	36495	38576	40657	42739	44821	46904	48988	51072	53156	55241
.957	57326	59412	61498	63585	65672	67760	69848	71936	74026	76115
.958	78205	80296	82387	84478	86570	88663	90756	92849	94943	97038
.959	99133	01228	03324	05420	07517	09615	11712	13811	15909	18009
Log.	0	1	2	3	4	5	6	7	8	9

Log	0	1	2	3	4	5	6	7	8	9
.960	91.20108	22209	24309	26411	28512	30614	32717	34820	36924	39028
.961	41132	43237	45343	47449	49556	51663	53770	55878	57987	60095
.962	62205	64315	66425	68536	70647	72759	74872	76985	79098	81212
.963	83326	85441	87556	89672	91788	93905	96022	98140	00258	02377
.964	92.04496	06615	08736	10856	12977	15099	17221	19344	21467	23590
.965	25714	27839	29964	32089	34215	36342	38469	40596	42724	44853
.966	46982	49111	51241	53372	55502	57634	59766	61898	64031	66164
.967	68298	70433	72567	74703	76839	78975	81112	83249	85387	87525
.968	89664	91803	93943	96083	98224	00365	02507	04649	06792	08935
.969	93.11079	13223	15368	17513	19659	21805	23951	26099	28246	30394
.970	32543	34692	36842	38992	41143	43294	45445	47597	49750	51903
.971	54057	56211	58365	60521	62676	64832	66989	69146	71303	73462
.972	75620	77779	79939	82099	84259	86420	88582	90744	92907	95070
.973	97233	99397	01562	03727	05892	08058	10225	12392	14559	16727
.974	94.18896	21065	23235	25405	27575	29746	31918	34090	36262	38435
.975	40609	42783	44957	47132	49308	51484	53660	55837	58015	60193
.976	62372	64551	66730	68910	71091	73272	75453	77635	79818	82001
.977	84185	86369	88553	90738	92924	95110	97297	99484	01671	03859
.978	95.06048	08237	10427	12617	14807	16998	19190	21382	23575	25768
.979	27962	30156	32350	34546	36741	38937	41134	43331	45529	47727
.980	49926	52125	54325	56525	58726	60927	63129	65331	67534	69737
.981	71941	74145	76350	78555	80761	82967	85174	87381	89589	91797
.982	94006	96216	98426	00636	02847	05058	07270	09482	11695	13909
.983	96.16123	18337	20552	22768	24984	27200	29417	31635	33853	36071
.984	38290	40510	42730	44950	47172	49393	51615	53838	56061	58285
.985	60509	62733	64959	67184	69411	71637	73864	76092	78321	80549
.986	82779	85008	87239	89469	91701	93933	96165	98398	00631	02865
.987	97.05100	07335	09570	11806	14043	16280	18517	20755	22994	25233
.988	27472	29712	31953	34194	36436	38678	40921	43164	45407	47652
.989	49896	52142	54387	56634	58881	61128	63376	65624	67873	70122
.990	72372	74623	76874	79125	81377	83630	85883	88136	90390	92645
.991	94900	97155	99412	01668	03925	06183	08441	10700	12959	15219
.992	98.17479	19740	22002	24263	26526	28789	31052	33316	35581	37846
.993	40111	42377	44644	46911	49178	51446	53715	55984	58254	60524
.994	62795	65066	67338	69610	71883	74156	76430	78705	80980	83255
.995	85531	87807	90084	92362	94640	96919	99198	01477	03758	06038
.996	99.08319	10601	12883	15166	17450	19733	22018	24303	26588	28874
.997	31160	33447	35735	38023	40312	42601	44890	47181	49471	51762
.998	54054	56346	58639	60933	63226	65521	67816	70111	72407	74704
.999	77001	79298	81596	83895	86194	88494	90794	93095	95396	97698
Log	0	1	2	3	4	5	6	7	8	9

The use of LOGARITHMS may briefly be explained as follows :

Put m and n for any two Numbers, and M and N for their Logarithms: Then,

$$M + N = \text{Log. of } m \times n.$$

$$M - N = \text{Log. of } \frac{m}{n}.$$

$$n \times M = \text{Log. of } m^n.$$

$$\frac{M}{n} = \text{Log. of } \sqrt[n]{m}.$$

o Degree

M	Sine	Sub D.	Tang.	Add D.	Co. Sine.	D.	M
0					10,0000000		60
1	6,4637261		6,4637261		0		59
2	7647561		7647562	1	9,999999.9	1	58
3	9408473		9408475	2	8	1	57
4	7,0657860	1	7,0657863	2	7	1	56
5	1626960	1	1626964	3	5	2	55
6	2418771	2	2418778	5	3	2	54
7	3088239	3	3088248	7	1	2	53
8	3668157	4	3668169	8	9,99999.88	3	52
9	4179681	5	4179696	10	85	3	51
10	4637255	6	4637273	12	82	3	50
11	5051181	7	5051203	15	78	4	49
12	5429065	8	5429091	18	74	4	48
13	5776684	10	5776715	21	69	5	47
14	7,6.098530	12	7,6.098566	25	64	5	46
15	398160	14	398201	28	59	5	45
16	678445	16	678492	31	53	6	44
17	941733	18	941786	36	47	6	43
18	7,7.189966	20	7,7.190026	40	40	6	42
19	424775	22	424841	44	34	7	41
20	647537	24	647610	49	27	7	40
21	859427	27	859508	54	19	8	39
22	7,8.061458	30	7,8.061547	59	11	8	38
23	254507	32	254604	65	03	8	37
24	439338	35	439444	71	9,99998.94	9	36
25	616623	38	616738	77	85	9	35
26	786953	41	787077	83	76	9	34
27	950854	45	950988	89	66	10	33
28	7,9.108793	48	7,9.108938	97	56	10	32
29	261190	51	261344	103	45	10	31
30	408419	54	408584	111	35	11	30
31	550819	59	550996	118	23	11	29
32	688698	63	688886	125	12	11	28
33	822334	66	822534	134	00	12	27
34	951980	70	952192	142	9,99997.88	12	26
35	8,0.077867	74	8,0.078092	151	75	13	25
36	200207	79	200445	159	62	13	24
37	319195	83	319446	168	48	13	23
38	435009	88	435274	177	35	14	22
39	547814	93	548094	187	21	14	21
40	657763	98	658057	196	06	15	20
41	764997	103	765306	206	9,99996.91	15	19
42	869646	108	869970	216	76	15	18
43	971832	114	972172	226	60	16	17
44	8,1.071669	119	8,1.072025	237	44	16	16
45	169262	124	169634	248	28	16	15
46	264710	129	265099	260	11	17	14
47	358104	136	358510	270	9,99995.94	17	13
48	449532	141	449956	283	77	17	12
49	539075	147	539516	294	59	18	11
50	626808	153	627267	306	41	18	10
51	712804	159	713282	319	22	19	9
52	797129	165	797626	332	03	19	8
53	879848	172	880364	344	9,99994.84	19	7
54	961020	179	961556	357	64	20	6
55	8,2.040703	185	8,2.041259	371	44	20	5
56	118949	192	119526	385	24	20	4
57	195811	198	196408	399	03	21	3
58	271335	206	271953	412	9,99993.82	21	2
59	345568	213	346208	427	60	22	1
M	Co Sine	Sub D.	Ar. Co. Tan	Add D.	Sine.	D.	M

Logarithms of Sines and Tangents.

95

1 Degree

M	Sine.	Subs.	D.	Tang.	Add.	D.	Co. Sine.	D.	M
0	8,2.418553	2.20	7	8,2.419215	4.42	15	9,9999.338	22	60
1	490332	27	8	491015	56	15	316	22	59
2	560943	35	8	561649	71	15	294	22	58
3	630424	42	8	631153	87	15	271	23	57
4	698810	51	8	699563	5.02	16	247	23	56
5	766136	58	8	766912	18	16	224	24	55
6	832434	66	8	833234	34	16	200	24	54
7	897734	75	8	898559	50	16	175	25	53
8	962067	83	9	962917	67	17	150	25	52
9	8,3.025460	92	9	8,3.026335	83	17	125	25	51
10	087941	3.00	9	088842	6.01	17	100	25	50
11	149536	08	9	150462	18	17	074	26	49
12	210269	17	9	211221	35	18	047	26	48
13	270163	27	9	271143	53	18	021	26	47
14	329243	35	9	330249	71	18	9,9998.994	27	46
15	387529	45	9	388563	89	19	966	27	45
16	445043	54	9	446105	7.08	19	939	28	44
17	501805	63	9	502895	27	19	911	28	43
18	557835	72	10	558953	46	19	882	29	42
19	613150	82	10	614297	65	19	853	29	41
20	667769	92	10	668945	84	20	824	29	40
21	721710	4.01	10	722915	8.04	20	794	30	39
22	774988	11	10	776223	24	20	764	30	38
23	827620	22	10	828886	44	20	734	30	37
24	879622	32	10	880918	64	21	703	31	36
25	931008	42	10	932336	86	21	672	31	35
26	981793	52	11	983152	9.07	21	641	31	34
27	8,4.031990	63	11	8,4.033381	28	21	609	32	33
28	081614	74	11	083037	49	22	577	32	32
29	130676	85	11	132132	71	22	544	33	31
30	179190	96	11	180679	93	22	512	33	30
31	227168	5.07	11	228690	10.15	22	478	33	29
32	274621	18	11	276176	37	23	445	34	28
33	321561	29	11	323150	60	23	411	34	27
34	367999	40	12	369622	83	23	376	34	26
35	413944	53	12	415603	11.06	23	342	35	25
36	459409	64	12	461103	30	24	306	35	24
37	504402	76	12	506131	53	24	271	35	23
38	548934	88	12	550699	77	24	235	36	22
39	593013	6.00	12	594814	12.01	24	199	36	21
40	636649	12	12	638486	25	25	162	37	20
41	679850	25	12	681725	50	25	125	37	19
42	722626	37	12	724538	75	25	088	37	18
43	764984	49	13	766933	13.00	25	050	38	17
44	806932	62	13	808920	26	25	012	38	16
45	848479	75	13	850505	51	26	9,9997.974	38	15
46	889632	88	13	891696	76	26	935	39	14
47	930398	7.01	13	932502	14.03	26	896	39	13
48	970784	15	13	972928	29	27	856	39	12
49	8,5.010798	28	13	8,5.012982	56	27	817	40	11
50	050447	41	13	052671	83	27	776	40	10
51	089736	55	13	092001	15.10	27	736	40	9
52	128673	68	14	130978	37	28	695	41	8
53	167264	81	14	169610	65	28	653	41	7
54	205514	95	14	207902	93	28	612	41	6
55	243430	8.09	14	245860	16.21	28	570	42	5
56	281017	24	14	283490	49	28	527	43	4
57	318281	39	14	320797	77	29	484	43	3
58	355228	53	15	357787	17.06	29	441	43	2
59	391863	68	15	394466	35	29	398	43	1
M	Co. Sine.	Subs.	D.	Ar. Co. Tan	Add	D.	Sine.	D.	M

88 Degrees

2 Degrees.

	Sine	Diff	Tangent	Diff	Co. Sine.		M
0	8,54.28192	3.6026	8,54.30838	3.6071	9,9997.354	4.5	60
1	64218	5730	66909	5774	309	5	59
2	99948	5438	8,55.02683	5483	265	4	58
3	3,55.35386	5150	38166	5196	220	5	57
4	70536	4868	73362	4914	174	6	56
5	8,56.05404	4590	8,56.08276	4636	128	6	55
6	39994	4316	42912	4363	082	6	54
7	74310	4047	77275	4093	036	6	53
8	8,57.08357	3782	8,57.11368	3829	9,9996.989	7	52
9	42139	3521	45197	3569	942	7	51
10	75660	3263	78766	3311	894	8	50
11	8,58.08923	3010	8,58.12077	3059	846	8	49
12	41933	2761	45136	2809	798	8	48
13	74694	2515	77945	2564	749	9	47
14	8,59.07209	2274	8,59.10509	2323	700	9	46
15	39483	2034	42832	2085	650	5.0	45
16	71517	1800	74917	1850	601	4.9	44
17	8,60.03317	1569	8,60.06767	1619	550	5.1	43
18	34886	1340	38386	1391	500	0	42
19	66226	1115	69777	1166	449	1	41
20	97341	0894	8,61.00943	0946	398	1	40
21	8,61.28235	0675	31889	0727	346	2	39
22	58910	0459	62616	0511	294	2	38
23	89369	0247	93127	0300	242	2	37
24	8,62.19616	0037	8,62.23427	0091	189	3	36
25	49653	2.9831	53518	2.9884	136	3	35
26	79484	9627	83402	9681	082	4	34
27	8,63.09111	9426	8,63.13083	9480	028	4	33
28	38537	9227	42563	9282	9,9995.974	4	32
29	67764	9032	71845	9086	919	5	31
30	96796	8838	8,64.00931	8894	865	4	30
31	8,64.25634	8648	29825	8703	809	6	29
32	54282	8460	58528	8516	753	6	28
33	82742	8274	87044	8331	697	6	27
34	8,65.11016	8091	8,65.15375	8147	641	6	26
35	39107	7910	43522	7968	584	7	25
36	67017	7731	71490	7789	527	7	24
37	94748	7555	99279	7612	469	8	23
38	8,66.22303	7381	8,66.26891	7440	411	8	22
39	49684	7209	54331	7267	353	8	21
40	76893	7039	81598	7099	295	8	20
41	8,67.03932	6872	8,67.08697	6931	236	9	19
42	30804	6706	35628	6765	176	6.0	18
43	57510	6542	62393	6603	116	0	17
44	84052	6381	88996	6441	056	0	16
45	8,68.10433	6221	8,68.15437	6282	9,9994.996	0	15
46	36654	6064	41719	6125	935	1	14
47	62718	5907	67844	5969	874	1	13
48	88625	5754	93813	5816	812	2	12
49	8,69.14379	5601	8,69.19629	5663	750	2	11
50	39980	5451	45292	5514	688	2	10
51	65431	5303	70806	5366	625	3	9
52	90734	5155	96172	5218	562	3	8
53	8,70.15889	5010	8,70.21390	5075	498	4	7
54	40899	4867	46465	4930	435	3	6
55	65766	4724	71395	4790	370	5	5
56	90490	4585	96185	4649	306	4	4
57	8,71.15075	4445	8,71.20834	4511	241	5	3
58	39520	4309	45345	4374	176	5	2
59	63829	4173	69719	4239	110	6	1
M	Co. Sine.	Diff.	Ar Co. Tan	Diff.	Sine.	D.	M

Logarithms of Sines and Tangents.

97

3 Degrees.

M	Sine.	Diff.	Tang.	Diff.	Co-Sine.	Diff.	M
0	8,71.88002	24.038	8,71.93958	24.105	9,9994.044	6.660	
1	8,72.12040	23.906	8,72.18063	23.972	9,9993.978	6.59	
2	35946	775	42035	842	911	7.58	
3	59721	645	65877	712	844	7.57	
4	83366	516	89589	585	776	8.56	
5	8,73.06882	390	8,73.13174	457	708	8.55	
6	30272	263	36631	333	640	8.54	
7	53535	140	59964	208	572	8.53	
8	76675	016	83172	086	503	9.52	
9	99691	22.895	8,74.06258	22.964	433	7.051	
10	8,74.22586	774	29222	845	364	6.950	
11	45360	655	52067	725	293	7.149	
12	68015	538	74792	608	223	0.48	
13	90553	420	97400	492	152	1.47	
14	8,75.12973	305	8,75.19892	377	081	1.46	
15	35278	191	42269	262	009	2.45	
16	57469	077	64531	150	9,9992.938	1.44	
17	79546	21.966	86681	038	865	3.43	
18	8,76.01512	854	8,76.08719	21.928	793	2.42	
19	23366	745	30647	818	720	3.41	
20	45111	636	52465	710	646	4.40	
21	66747	528	74175	602	572	4.39	
22	88275	422	95777	497	498	4.38	
23	8,77.09697	317	8,77.17274	391	424	4.37	
24	31014	212	38665	287	349	5.36	
25	52226	108	59952	184	274	5.35	
26	73334	006	81136	082	198	6.34	
27	94340	20.904	8,78.02218	20.981	122	6.33	
28	8,78.15244	804	23199	880	046	6.32	
29	36048	705	44079	782	9,9991.969	7.31	
30	56753	606	64861	683	892	7.30	
31	77359	508	85544	586	815	7.29	
32	97867	411	8,79.06130	490	737	8.28	
33	8,79.18278	316	26620	394	659	8.27	
34	38594	220	47014	299	580	9.26	
35	58814	127	67313	206	501	9.25	
36	78941	033	87519	113	422	9.24	
37	98974	19.941	8,80.07632	021	342	8.023	
38	8,80.18915	849	27653	19.930	262	0.22	
39	38764	759	47583	839	182	0.21	
40	58523	669	67422	750	101	1.20	
41	78192	580	87172	662	020	1.19	
42	97772	492	8,81.06834	573	9,9990.938	2.18	
43	8,81.17264	404	26407	487	856	1.17	
44	36668	317	45894	400	774	2.16	
45	55985	232	65294	314	691	3.15	
46	75217	146	84608	230	608	3.14	
47	94363	062	8,82.03838	146	525	3.13	
48	8,82.13425	18.979	22984	062	441	4.12	
49	32404	895	42046	18.980	357	4.11	
50	51299	813	61026	898	273	4.10	
51	70112	732	79924	817	188	5.9	
52	88844	651	98741	737	103	5.8	
53	8,83.07495	571	8,83.17478	656	017	6.7	
54	26066	491	36134	578	9,9989.931	6.6	
55	44557	412	54712	499	845	6.5	
56	62969	335	73211	422	758	7.4	
57	81304	257	91633	344	671	7.3	
58	99561	180	8,84.09977	268	584	7.2	
59	8,84.17741	104	28245	192	496	8.1	
M	Co Sine	Diff.	Ar Co Tang	Diff.	Sine.	Diff.	M

86 Degrees.

N

4 Degrees.

M	Sine.	Diff.	Tang.	Diff.	Co Sine.	Diff.	M
0	8,84.35845	18.029	8,84.46437	18.117	9,9989 408	8.860	
1	53874	17.953	64554	043	319	959	
2	71827	880	82597	17.969	230	958	
3	89707	805	8,85.00566	895	141	957	
4	8,85.07512	733	18461	822	052	956	
5	25245	660	36283	751	9,9988 962	9.055	
6	42905	588	54034	679	871	154	
7	60493	517	71713	608	780	153	
8	78010	447	89321	538	689	152	
9	95457	376	8,86.06859	468	598	151	
10	8,86.12833	306	24327	398	506	250	
11	30139	237	41725	330	414	249	
12	47376	169	59055	262	321	348	
13	64545	101	76317	194	228	347	
14	81646	034	93511	127	135	346	
15	98680	16.966	8,87.10638	061	041	445	
16	8,87.15646	900	27699	16.995	9,9987 947	444	
17	32546	835	44694	929	853	443	
18	49381	769	61623	864	758	542	
19	66150	704	78487	799	663	541	
20	82854	639	95286	736	567	640	
21	99493	576	8,88.12022	672	471	639	
22	8,88.16069	512	28694	609	375	638	
23	32581	450	45303	547	278	737	
24	49031	387	61850	484	181	736	
25	65418	325	78334	423	084	735	
26	81743	264	94757	362	9,9986 986	834	
27	98007	202	8,89.11119	301	888	833	
28	8,89 14209	142	27420	240	790	832	
29	30351	082	43660	182	691	931	
30	46433	022	59842	121	591	930	
31	62455	15.963	75963	063	492	10.029	
32	78418	904	92026	004	392	028	
33	94322	846	8,90.08030	15.947	292	027	
34	8,90 10168	787	23977	889	191	126	
35	25955	730	39866	831	090	125	
36	41685	673	55697	775	9,9985 988	224	
37	57358	617	71472	718	886	223	
38	72975	560	87190	663	784	222	
39	88535	504	8,91.02853	607	682	221	
40	8,91.04039	448	18460	552	579	320	
41	19487	394	34012	497	475	419	
42	34881	338	49509	443	372	318	
43	50219	285	64952	388	268	417	
44	65504	230	80340	335	163	516	
45	80734	177	95675	282	058	515	
46	95911	123	8,92.10957	229	9,9984 953	514	
47	8,92.11034	071	26186	177	848	513	
48	26105	018	41363	124	742	612	
49	41123	14.966	56487	073	636	611	
50	56089	914	71560	021	529	710	
51	71003	863	86581	14.971	422	709	
52	85866	812	8,93.01552	919	315	708	
53	8,93.00678	761	16471	869	207	807	
54	15439	711	31340	820	099	806	
55	30150	661	46160	769	9,9983 990	905	
56	44811	611	60929	721	881	904	
57	59422	561	75650	671	773	903	
58	73983	513	90321	623	663	902	
59	88496	464	8,94.04944	574	553	11.001	
M	Co-Sine.	Diff.	ArCo.Tang.	Diff.	Sine.	Diff.	M

85 Degrees.

5 Degrees.

M.	Sine.	Diff.	Tangent.	Diff.	Co. Sine.	Diff.	M.
0	8,94.02960	14.416	8,94.19518	14 526	9,9983.442	11.1	60
1	17376	367	34044	479	332	0	59
2	31743	320	48523	431	220	2	58
3	46063	272	62954	384	109	1	57
4	60335	226	77338	338	9,9982.997	2	56
5	74561	178	91676	291	885	2	55
6	88739	132	8,95.05967	244	772	3	54
7	8,95.02871	086	20211	199	660	2	53
8	16957	039	34410	154	546	4	52
9	30996	13.995	48564	108	433	3	51
10	44991	949	62672	063	318	5	50
11	58940	903	76735	019	204	4	49
12	72843	860	90754	13 974	089	5	48
13	86703	814	8,96.04728	931	9,9981 974	5	47
14	8,96.00517	771	18659	886	859	5	46
15	14288	726	32545	843	743	6	45
16	28014	683	46388	800	626	6	44
17	41697	640	60188	756	510	7	43
18	55337	597	73944	714	393	7	42
19	68934	553	87658	672	275	8	41
20	82487	512	8,97.01330	629	158	7	40
21	95999	469	14959	588	040	8	39
22	8,97.09468	427	28547	545	9,9980.921	9	38
23	22895	385	42092	505	802	9	37
24	36280	344	55597	463	683	9	36
25	49624	302	69060	423	563	12.0	35
26	62926	262	82483	382	443	0	34
27	76188	220	95865	341	323	0	33
28	89408	181	8,98.09206	301	202	1	32
29	8,98.02589	140	22507	262	081	1	31
30	15729	100	35769	222	9,9979.960	1	30
31	28829	060	48991	182	838	2	29
32	41889	021	62173	144	716	2	28
33	54910	12.981	75317	104	593	3	27
34	67891	943	88421	066	470	3	26
35	80834	903	8,99.01487	027	347	3	25
36	93737	865	14514	12.989	223	4	24
37	8,99.06602	827	27503	951	099	4	23
38	19429	788	40454	913	9,9978.975	4	22
39	32217	751	53367	876	850	5	21
40	44968	713	66243	838	725	5	20
41	57681	675	79081	802	599	6	19
42	70356	638	91883	764	473	6	18
43	82994	601	9,00.04647	728	347	6	17
44	95595	565	17375	691	220	7	16
45	9,00.08160	527	30066	655	093	7	15
46	20687	492	42721	619	9,9977.966	7	14
47	33179	455	55340	584	838	8	13
48	45634	419	67924	547	710	8	12
49	58053	383	80471	513	582	8	11
50	70436	348	92984	477	453	9	10
51	82784	312	9,01.05461	442	323	9	9
52	95096	278	17903	407	194	13.0	8
53	9,01.07374	242	30310	372	064	0	7
54	19616	207	42682	339	9,9976.933	0	6
55	31823	173	55021	304	803	1	5
56	43996	139	67325	269	672	1	4
57	56135	104	79594	237	540	2	3
58	68239	070	91831	202	408	2	2
59	80309	037	9,02.04033	169	276	2	1
M	Co. Sine.	Diff.	Ar. Co. Tan.	Diff.	Sine.	Diff.	M

6 Degrees.

M.	Sine.	Diff.	Tang	Diff.	Co. Sine	Diff.	M.
0	9,01.92346	120.02	9,02.16202	121.3	9,976.143	13.3	60
1	9,02.04348	119.70	28338	03	011	3	59
2	16318	36	40441	120.6	9,9975.877	3	58
3	28254	03	52510	3	743	4	57
4	40157	118.70	64548	04	609	4	56
5	52027	38	76552	119.72	475	4	55
6	63865	04	88524	40	340	5	54
7	75669	117.73	9,03.00464	09	205	5	53
8	87442	40	12373	118.76	069	6	52
9	99182	08	24249	44	9,9974 933	6	51
10	9,03.10890	116.77	36093	13	797	6	50
11	22567	45	47906	117.82	660	7	49
12	34212	13	59688	51	523	7	48
13	45825	115.82	71439	20	386	7	47
14	57407	51	83159	116.89	248	8	46
15	68958	19	94848	58	110	8	45
16	80477	114.89	9,04.06506	28	9,9973.971	8	44
17	91966	58	18134	115.97	833	8	43
18	9,04.03424	28	29731	68	693	9	42
19	14852	113.97	41299	37	554	9	41
20	26249	68	52836	07	414	14.0	40
21	37617	37	64343	114.78	273	1	39
22	48954	07	75821	49	132	1	38
23	60261	112.77	87270	19	9,9972.991	1	37
24	71538	48	98689	113.89	850	1	36
25	82786	19	9,05.10078	61	708	2	35
26	94005	111.89	21439	32	566	2	34
27	9,05.05194	60	32771	03	423	3	33
28	16354	31	44074	112.75	280	3	32
29	27485	03	55349	46	137	3	31
30	38588	110.73	66595	18	9,9971.993	4	30
31	49661	45	77813	111.89	849	4	29
32	60706	17	89002	62	704	5	28
33	71723	109.88	9,06.00164	33	559	5	27
34	82711	61	11297	06	414	5	26
35	93672	32	22403	110.79	268	6	25
36	9,06.04604	05	33482	51	122	6	24
37	15509	108.77	44533	23	9,9970.976	6	23
38	26386	49	55556	109.97	829	7	22
39	37235	22	66553	69	682	7	21
40	48057	107.95	77522	43	535	7	20
41	58852	67	88465	16	387	8	19
42	69619	41	99381	108.89	239	8	18
43	80360	14	9,07.10270	63	090	9	17
44	91074	106.87	21133	36	9,9969 941	9	16
45	9,07.01761	60	31969	10	792	9	15
46	12421	34	42779	107.84	642	15.0	14
47	23055	08	53563	58	492	0	13
48	33663	105.81	64321	32	342	0	12
49	44244	55	75053	07	191	1	11
50	54799	30	85760	106.81	040	1	10
51	65329	03	96441	55	9,9968.888	2	9
52	75832	104.78	9,08.07096	30	736	2	8
53	86310	52	17726	05	584	2	7
54	96762	27	28331	105.80	431	3	6
55	9,08.07189	01	38911	55	278	3	5
56	17590	103.76	49466	30	125	3	4
57	27966	51	59996	05	9,9967.971	4	3
58	38317	26	70501	104.80	817	4	2
59	48643	02	80981	57	662	5	1
1	Co. Sine.	Diff.	ArCoTa	Diff.	Sine.	Diff.	M.

7 Degrees.

M.	Sine.	Diff.	Tangent.	Diff.	Co. Sine.	Diff.	M.
0	9,08.58945	102.76	9,08.91438	104.31	9,9967.507	15.5	60
1	69221	52	9,09.01869	08	352	5	59
2	79473	27	12277	103.83	196	6	58
3	89700	03	22660	60	040	6	57
4	99903	101.79	33020	35	9,9966.884	6	56
5	9,09.10082	55	43355	12	727	7	55
6	20237	30	53667	102.88	570	7	54
7	30367	07	63955	64	412	8	53
8	40474	100.82	74219	41	254	8	52
9	50556	59	84460	18	096	8	51
10	60615	36	94678	101.94	9,9965.937	9	50
11	70651	11	9,10.04872	72	778	9	49
12	80662	99.89	15044	48	619	9	48
13	90651	65	25192	25	459	16.0	47
14	9,10.00616	42	35317	03	299	0	46
15	10558	19	45420	100.80	138	1	45
16	20477	98.96	55500	57	9,9964.977	1	44
17	30373	73	65557	34	816	1	43
18	40246	50	75591	13	655	1	42
19	50096	28	85604	99.90	493	2	41
20	59924	05	95594	68	330	3	40
21	69729	97.83	9,11.05562	46	167	3	39
22	79512	60	15508	23	004	3	38
23	89272	38	25431	02	9,9963.841	3	37
24	99010	16	35333	98.80	677	4	36
25	9,11.08726	96.94	45213	59	513	4	35
26	18420	72	55072	37	348	5	34
27	28092	50	64909	15	183	5	33
28	37742	28	74724	97.94	018	5	32
29	47370	07	84518	73	9,9962.852	6	31
30	56977	95.85	94291	52	686	6	30
31	66562	63	9,12.04043	30	519	7	29
32	76125	42	13773	09	352	7	28
33	85667	21	23482	96.89	185	7	27
34	95188	00	33171	68	017	8	26
35	9,12.04688	94.79	42839	47	9,9961.849	8	25
36	14167	57	52486	26	681	8	24
37	23624	37	62112	06	512	9	23
38	33061	16	71718	95.85	343	9	22
39	42477	93.95	81303	65	174	9	21
40	51872	74	90868	45	004	17.0	20
41	61246	54	9,13.00413	24	9,9960.834	0	19
42	70600	34	09937	05	663	1	18
43	79934	13	19442	94.84	492	1	17
44	89247	92.92	28926	65	321	1	16
45	98539	73	38391	44	149	2	15
46	9,13.07812	52	47835	25	9,9959.977	2	14
47	17064	33	57260	05	804	3	13
48	26297	12	66665	93.86	631	3	12
49	35509	91.93	76051	66	458	3	11
50	44702	73	85417	47	284	4	10
51	53875	53	94764	28	111	4	9
52	63028	33	9,14.04092	08	9,9958.936	5	8
53	72161	14	13400	92.89	761	5	7
54	81275	90.95	22689	70	586	5	6
55	90370	75	31959	51	411	5	5
56	99445	56	41210	32	235	6	4
57	9,14.08501	36	50442	13	059	6	3
58	17537	18	59655	91.94	9,9957.882	7	2
59	26555	89.98	68849	76	705	7	1
M.	Co. Sine.	Diff.	Ar. Co. Ta	Diff.	Sine.	Diff.	M.

8 Degrees.

M.	Sine.	Diff.	Tangent.	Diff.	Co. Sine.	Diff.	M.
0	9,14.35553	89.79	9,14.78025	91.57	9,9957.528	17.7	60
1	44532	61	87182	39	350	8	59
2	53493	42	96321	20	172	8	58
3	62435	23	9,15.05441	02	9,9956.993	9	57
4	71358	04	14543	90.84	815	8	56
5	80262	88.86	23627	65	635	9	55
6	89148	67	32692	47	456	18.0	54
7	98015	49	41739	30	276	0	53
8	9,15.06864	30	50769	11	095	1	52
9	15694	13	59780	89.93	9,9955.915	0	51
10	24507	87.94	68773	75	734	1	50
11	33301	75	77748	58	552	2	49
12	42076	58	86706	40	370	2	48
13	50834	40	95646	23	188	2	47
14	59574	22	9,16.04569	04	005	3	46
15	68296	04	13473	88.88	9,9954.822	3	45
16	77000	86.86	22361	70	639	3	44
17	85686	68	31231	52	455	4	43
18	94354	51	40083	36	271	4	42
19	9,16.03005	34	48919	18	087	4	41
20	11639	15	57737	01	9,9953.902	5	40
21	20254	85.99	66538	87.84	717	5	39
22	28853	81	75322	67	531	6	38
23	37434	64	84089	50	345	6	37
24	45998	46	92839	33	159	6	36
25	54544	30	9,17.01572	17	9,9952.972	7	35
26	63074	12	10289	00	785	7	34
27	71586	84.95	18989	86.83	597	8	33
28	80081	78	27672	66	409	8	32
29	88559	62	36338	50	221	8	31
30	97021	44	44988	34	033	8	30
31	9,17.05465	28	53622	17	9,9951.844	9	29
32	13893	12	62239	01	654	19.0	28
33	22305	83.94	70840	85.85	464	0	27
34	30699	78	79425	68	274	0	26
35	39077	62	87993	53	084	0	25
36	47439	45	96546	36	9,9950.893	1	24
37	55784	28	9,18.05082	20	702	1	23
38	64112	13	13602	04	510	2	22
39	72425	82.96	22106	84.89	318	2	21
40	80721	80	30595	73	126	2	20
41	89001	64	39068	57	9,9949.933	3	19
42	97265	47	47525	41	740	3	18
43	9,18.05512	32	55966	26	546	4	17
44	13744	16	64392	10	352	4	16
45	21960	00	72802	83.94	158	4	15
46	30160	81.84	81196	79	9,9948.964	4	14
47	38344	68	89575	64	769	5	13
48	46512	53	97939	48	573	6	12
49	54665	37	9,19.06287	34	377	6	11
50	62802	21	14621	18	181	6	10
51	70923	06	22939	02	9,9947.985	6	9
52	79029	80.91	31241	82.88	788	7	8
53	87120	75	39529	73	591	7	7
54	95195	59	47802	57	393	8	6
55	9,19.03254	45	56059	43	195	8	5
56	11299	29	64302	28	9,9946.997	8	4
57	19328	14	72530	13	798	9	3
58	27342	79.99	80743	81.98	599	9	2
59	35341	83	88941	84	399	20.0	1
M.	Co. Sine.	Diff.	Ar. Co. Tan.	Diff.	Sine.	Diff.	M.

81 Degrees.

9 Degrees.

M	Sine	Diff	Tangent.	Diff	Co. Sine	Diff	M
0	9,19.43324	79.69	9,19.97125	81.69	9,9946.199	20.0	60
1	51293	54	9,20.05294	55	9,9945.999	0	59
2	59247	39	13449	39	798	1	58
3	67186	24	21588	26	597	1	57
4	75110	09	29714	11	396	1	56
5	83019	78.94	37825	80.97	194	2	55
6	90913	80	45922	82	9,9944 992	2	54
7	98793	65	54004	68	789	3	53
8	9,20.06658	51	62072	54	587	2	52
9	14509	36	70126	39	383	4	51
10	22345	22	78165	26	180	3	50
11	30167	07	86191	12	9,9943.975	5	49
12	37974	77.92	94203	79.97	771	4	48
13	45766	79	9,21.02200	84	566	5	47
14	53545	64	10184	69	361	5	46
15	61309	50	18153	56	156	5	45
16	69059	36	26109	42	9,9942.950	6	44
17	76795	21	34051	29	743	7	43
18	84516	08	41980	14	537	6	42
19	92224	76.93	49894	01	330	7	41
20	99917	80	57795	78.88	122	8	40
21	9,21.07597	66	65683	73	9,9941.914	8	39
22	15263	51	73556	61	706	8	38
23	22914	38	81417	47	498	8	37
24	30552	24	89264	33	289	9	36
25	38176	11	97097	20	079	9	35
26	45787	75.97	9,22.04917	07	9,9940.870	21.0	34
27	53384	83	12724	77.94	659	0	33
28	60967	69	20518	80	449	0	32
29	68536	56	28298	67	238	1	31
30	76092	43	36065	54	027	1	30
31	83635	29	43819	42	9,9939 815	2	29
32	91164	16	51561	28	603	2	28
33	98680	02	59289	15	391	2	27
34	9,22.06182	74.89	67004	02	178	3	26
35	13671	76	74706	76.89	9,9938.965	3	25
36	21147	62	82395	76	752	3	24
37	28609	50	90071	64	538	4	23
38	36059	36	97735	51	324	4	22
39	43495	23	9,23.05386	38	109	5	21
40	50918	10	13024	26	9,9937.894	5	20
41	58328	73.97	20650	12	679	5	19
42	65725	85	28262	01	463	6	18
43	73110	71	35863	75.88	247	6	17
44	80481	58	43451	75	030	7	16
45	87839	46	51026	63	9,9936.813	7	15
46	95185	33	58589	50	596	7	14
47	9,23.02518	20	66139	39	378	8	13
48	09838	07	73678	25	160	8	12
49	17145	72.95	81203	14	9,9935.942	8	11
50	24440	82	88717	01	723	9	10
51	31722	70	96218	74.90	504	9	9
52	38992	57	9,24.03708	77	285	9	8
53	46249	45	11185	65	065	22.0	7
54	53494	32	18650	53	9,9934.844	1	6
55	60726	20	26103	40	624	0	5
56	67946	07	33543	29	403	1	4
57	75153	71.96	40972	17	181	2	3
58	82349	83	48389	05	9,9933 959	2	2
59	89532	70	55794	73.94	737	2	1
M	Co. Sine.	Diff.	Ar. o Tang.	Diff.	Sine	Diff.	M

80 Degrees.

10 Degrees.

M.	Sine	Diff.	Tangent.	Diff.	Co. Sine	Diff.	M.
0	9,23.96702	71. 59	9,24.63188	73. 81	9,9933.515	22. 2	60
1	9,24.03861	46	70569	70	292	3	59
2	11007	34	77939	58	068	4	58
3	18141	23	85297	46	9,9932.845	3	57
4	25264	10	92643	35	621	4	56
5	32374	70. 98	99978	23	396	5	55
6	39472	86	9,25.07301	11	171	5	54
7	46558	74	14612	00	9,9931.946	5	53
8	53632	63	21912	72. 88	720	6	52
9	60695	51	29200	77	494	6	51
10	67746	38	36477	66	268	6	50
11	74784	27	43743	54	041	7	49
12	81811	16	50997	43	9,9930.814	7	48
13	88827	03	58240	32	587	7	47
14	95830	69. 92	65472	20	359	8	46
15	9,25.02822	81	72692	09	131	8	45
16	09803	69	79901	71. 98	9,9929.902	9	44
17	16772	57	87099	86	673	9	43
18	23729	46	94285	76	444	9	42
19	30675	34	9,26.01461	64	214	23. 0	41
20	37609	23	08625	54	9,9928.984	0	40
21	44532	12	15779	42	753	1	39
22	51444	00	22921	32	522	1	38
23	58344	68. 89	30053	20	291	1	37
24	65233	77	37173	10	059	2	36
25	72110	67	44283	70. 99	9,9927.827	2	35
26	78977	55	51382	88	595	2	34
27	85832	44	58470	77	362	3	33
28	92676	33	65547	66	129	3	32
29	99509	21	72613	56	9,9926.895	4	31
30	9,26.06330	11	79669	45	661	4	30
31	13141	00	86714	35	427	4	29
32	19941	67. 88	93749	23	192	5	28
33	26729	78	9,27.00772	14	9,9925.957	5	27
34	33507	67	07786	02	722	5	26
35	40274	56	14788	69. 92	486	6	25
36	47030	45	21780	82	250	6	24
37	53775	34	28762	71	013	7	23
38	60509	23	35733	61	9,9924.776	7	22
39	67232	13	42694	50	539	7	21
40	73945	02	49644	40	301	8	20
41	80647	66. 91	56584	30	063	8	19
42	87338	81	63514	20	9,9923.824	9	18
43	94019	70	70434	09	585	9	17
44	9,27.00689	59	77343	68. 99	346	9	16
45	07348	49	84242	89	106	24. 0	15
46	13997	38	91131	78	9,9922.866	0	14
47	20635	28	98009	69	626	0	13
48	27263	17	9,28.04878	58	385	1	12
49	33880	07	11736	49	144	1	11
50	40487	65. 96	18585	38	9,9921.902	2	10
51	47083	86	25423	28	660	2	9
52	53669	76	32251	19	418	2	8
53	60245	66	39070	08	175	3	7
54	66811	55	45878	67. 99	9,9920.932	3	6
55	73366	45	52677	89	689	3	5
56	79911	34	59466	79	445	4	4
57	86445	25	66245	69	201	4	3
58	92970	14	73014	59	9,9919.956	5	2
59	99484	04	79773	50	711	5	1
M	Co. Sine.	Diff.	Ar. Co. Tan.	Diff.	Sine.	Diff.	M

79 Degrees.

Logarithms of Sines and Tangents.

I 5

11 Degrees

M	Sine.	Diff.	Tangent.	Diff.	Co Sine.	Diff.	M
0	9,28.05988	64.	9,28.86523	67.40	9,9919.466	24.5	60
1	12483	84	93263	30	220	6	59
2	18967	74	99993	20	9,9918.974	6	58
3	25441	64	9,29.06713	11	727	7	57
4	31905	54	13424	02	480	7	56
5	38359	44	20126	66.91	233	7	55
6	44803	34	26817	83	9,9917.986	7	54
7	51237	24	33500	72	737	8	53
8	57661	15	40172	64	489	8	52
9	64076	04	46836	53	240	9	51
10	70480	63.95	53489	45	9,9916.991	9	50
11	76875	85	60134	35	741	25.0	49
12	83260	76	66769	26	492	0	48
13	89636	65	73395	16	241	1	47
14	96001	56	80011	07	9,9915.990	1	46
15	9,29.02357	47	86618	65.98	739	1	45
16	08704	36	93216	88	488	1	44
17	15040	27	99804	79	236	2	43
18	21367	18	9,30.06383	71	9,9914.984	2	42
19	27685	08	12954	60	731	3	41
20	33993	62.98	19514	52	478	3	40
21	40291	89	26066	43	225	3	39
22	46580	79	32609	34	9,9913.971	4	38
23	52859	70	39143	24	717	4	37
24	59129	61	45667	16	462	5	36
25	65390	51	52183	06	207	5	35
26	71641	42	58689	64.98	9,9912.952	5	34
27	77883	33	65187	88	696	6	33
28	84116	23	71675	80	440	6	32
29	90339	14	78155	71	184	6	31
30	96553	05	84626	62	9,9911.927	7	30
31	9,30.02758	61.95	91088	53	670	7	29
32	08953	87	97541	44	412	8	28
33	15140	77	9,31.03985	36	154	8	27
34	21317	68	10421	27	9,9910.896	8	26
35	27485	59	16848	18	637	9	25
36	33644	50	23266	09	378	9	24
37	39794	40	29675	01	119	9	23
38	45934	32	36076	63.92	9,9909.859	26.0	22
39	52066	23	42468	83	598	0	21
40	58189	14	48851	75	338	1	20
41	64303	04	55226	66	077	1	19
42	70407	60.96	61592	58	9,9908.815	2	18
43	76503	87	67950	49	553	2	17
44	82590	78	74299	41	291	2	16
45	88668	69	80640	32	029	2	15
46	94737	61	86972	23	9,9907.766	3	14
47	9,31.00798	51	93295	16	502	3	13
48	06849	43	99611	07	239	4	12
49	12892	34	9,32.05918	62.98	9,9906.974	4	11
50	18926	25	12216	90	710	4	10
51	24951	17	18506	82	445	5	9
52	30968	08	24788	73	180	5	8
53	36976	59.99	31061	66	9,9905.914	6	7
54	42975	90	37327	57	648	6	6
55	48965	82	43584	48	382	6	5
56	54947	74	49832	41	115	7	4
57	60921	64	56073	32	9,9904.848	7	3
58	66885	56	62305	24	580	8	2
59	72841	48	68529	16	312	8	1
M	Co. Sine.	Diff.	ArCo Tang	Diff.	Sine.	Diff.	M

78 Degrees



12 Degrees.

M	Sine.	Diff.	Tangent.	Diff.	Co. Sine.	Diff.	M
0	9,31.78789	59.39	9,32.74745	62.08	9,9904.044	26.8	60
1	84728	31	80953	00	9,9903.775	9	59
2	90659	22	87153	61.92	506	9	58
3	96581	14	93345	83	237	9	57
4	9,32.02495	05	99528	76	9,9902.967	27.0	56
5	08400	58.97	9,33.05704	68	697	0	55
6	14297	89	11872	59	426	1	54
7	20186	80	18031	52	155	1	53
8	26066	72	24183	44	9,9901.883	2	52
9	31938	64	30327	36	612	1	51
10	37802	55	36463	28	339	3	50
11	43657	48	42591	20	067	2	49
12	49505	39	48711	12	9,9900.794	3	48
13	55344	30	54823	04	521	3	47
14	61174	23	60927	60.97	247	4	46
15	66997	14	67024	89	9,9899.973	4	45
16	72811	06	73113	81	698	5	44
17	78617	57.99	79194	73	423	5	43
18	84416	90	85267	66	148	5	42
19	90206	82	91333	58	9,9898.873	5	41
20	95988	73	97391	50	597	6	40
21	9,33.01761	66	9,34.03441	43	320	7	39
22	07527	58	09484	35	043	7	38
23	13285	50	15519	27	9,9897.766	7	37
24	19035	42	21546	20	489	7	36
25	24777	34	27566	12	211	8	35
26	30511	26	33578	05	9,9896.932	9	34
27	36237	18	39583	59.97	654	8	33
28	41955	10	45580	90	374	9	32
29	47665	03	51570	82	095	9	31
30	53368	56.94	57552	75	9,9895.815	28.0	30
31	59062	87	63527	67	535	0	29
32	64749	79	69494	60	254	1	28
33	70428	71	75454	53	9,9894.973	1	27
34	76099	63	81407	45	692	1	26
35	81762	56	87352	38	410	2	25
36	87418	47	93290	30	128	2	24
37	93065	41	99220	23	9,9893.845	3	23
38	98706	32	9,35.05143	16	562	3	22
39	9,34.04338	25	11059	09	279	3	21
40	09963	17	16963	01	9,9892.995	4	20
41	15580	10	22869	58.94	711	4	19
42	21190	02	28763	87	427	4	18
43	26792	55.94	34650	80	142	5	17
44	32386	87	40530	72	9,9891.856	5	16
45	37973	79	46402	65	571	5	15
46	43552	72	52267	59	285	6	14
47	49124	64	58126	51	9,9890.998	7	13
48	54688	57	63977	44	711	7	12
49	60245	49	69821	37	424	7	11
50	65794	42	75658	29	137	7	10
51	71336	34	81487	23	9,9889.849	8	09
52	76870	27	87310	16	560	0	08
53	82397	20	93126	09	271	0	07
54	87917	12	98935	01	9,9888.982	0	06
55	93429	05	9,36.04736	57.95	69	0	05
56	98934	54.98	10531	88	40	29.0	04
57	9,35.04432	90	16319	81	11	0	03
58	09922	83	22100	74	9,9887.822	0	02
59	15405	75	27874	67	53	0	01
M	Co. Sine	Diff	ArCo.Tang	Diff.	Sine.	Diff.	M

77 Degrees.

13 Degrees

M	Sine.	Diff.	Tang.	Diff.	Co-Sine	Diff.	M
0	9,35 20880	54. 69	9,36.33641	57. 60	9,9887.239	29. 260	
1	26349	61	39401	54	9,9886 947	2 59	
2	31810	54	45155	46	655	2 58	
3	37264	46	50901	40	363	2 57	
4	42710	40	56641	33	070	3 56	
5	48150	32	62374	26	9,9885.776	4 55	
6	53582	25	68100	19	482	4 54	
7	59007	19	73819	13	188	4 53	
8	64426	10	79532	06	9,9884 894	4 52	
9	69836	04	85238	56. 99	599	5 51	
10	75240	53. 97	90937	92	303	5 50	
11	80637	90	96629	86	008	5 49	
12	86027	82	9,37 02315	79	9,9883 712	6 48	
13	91409	76	07994	73	415	7 47	
14	96785	69	13667	66	118	7 46	
15	9,36 02154	61	19333	59	9,9882 821	7 45	
16	07515	55	24992	53	523	8 44	
17	12870	47	30645	46	225	8 43	
18	18217	41	36291	39	9,9881.927	8 42	
19	23558	34	41930	33	628	9 41	
20	28892	27	47563	27	329	9 40	
21	34219	20	53190	20	029	30. 0 39	
22	39539	13	58810	13	9,9880 729	0 38	
23	44852	06	64423	07	429	0 37	
24	50158	00	70030	01	128	1 36	
25	55458	52. 92	75631	55. 94	9,9879 827	1 35	
26	60750	86	81225	88	525	2 34	
27	66036	79	86813	81	223	2 33	
28	71315	72	92394	75	9,9878.921	2 32	
29	76587	66	97969	68	618	3 31	
30	81853	58	9,38 03537	63	315	3 30	
31	87111	52	09100	55	012	3 29	
32	92363	45	14655	50	9,9877.708	4 28	
33	97608	39	20205	43	404	4 27	
34	9,37 02847	32	25748	37	099	5 26	
35	03079	25	31285	31	9,9876.794	5 25	
36	13304	19	36816	24	488	6 24	
37	18523	12	42340	18	183	6 23	
38	23735	05	47858	12	9,9875.876	6 22	
39	28940	51. 99	53370	06	570	6 21	
40	34139	92	58876	00	263	7 20	
41	39331	86	64376	54. 93	9,9874 955	7 19	
42	44517	79	69869	87	648	7 18	
43	49696	72	75356	81	339	8 17	
44	54868	66	80837	75	031	8 16	
45	60034	60	86312	69	9,9873.722	9 15	
46	6519	53	91781	63	413	9 14	
47	70347	46	97244	56	103	31. 0 13	
48	75493	40	9,39 02700	51	9,9872.793	0 12	
49	80633	34	08151	44	482	1 11	
50	85767	27	13595	39	171	1 10	
51	90894	21	19034	32	9,9871.860	1 9	
52	96015	14	24466	27	549	1 8	
53	9,38 01129	08	29893	20	236	2 7	
54	06237	02	35313	14	9,9870.924	2 6	
55	11339	50. 95	40727	09	611	3 5	
56	16434	89	46136	02	298	3 4	
57	21523	82	51538	53. 97	9,9869.984	4 3	
58	26605	77	56935	91	670	4 2	
59	31682	70	62326	85	356	4 1	
M	Co Sine.	Diff.	Ar Co Tang	Diff.	Sine	Diff.	N.

14 Degrees.

M	Sine.	Diff.	Tangent.	Diff.	Co Sine.	Diff.	M
0	9,38.36752	50.63	9,39.67711	53.78	9,9869.041	31.5	60
1	41815	58	73089	74	9,9868.726	5	59
2	46873	51	78463	67	410	6	58
3	51924	45	83830	61	094	6	57
4	56969	39	89191	56	9,9867.778	6	56
5	62008	32	94547	49	461	7	55
6	67040	27	99896	44	144	7	54
7	72067	20	9,40.05240	38	9,9866.827	7	53
8	77087	14	10578	32	509	8	52
9	82101	08	15910	27	191	8	51
10	87109	02	21237	21	9,9865.872	9	50
11	92111	49.95	26558	15	553	9	49
12	97106	90	31873	09	233	32.0	48
13	9,39.02096	83	37182	04	9,9864.913	0	47
14	07079	78	42486	52.98	593	0	46
15	12057	71	47784	92	273	0	45
16	17028	65	53076	87	9,9863.952	1	44
17	21993	59	58363	81	630	2	43
18	26952	53	63644	75	308	2	42
19	31905	47	68919	70	9,9862.986	2	41
20	36852	42	74189	64	663	3	40
21	41794	35	79453	59	340	3	39
22	46729	29	84712	53	017	3	38
23	51658	23	89965	47	9,9861.693	4	37
24	56581	18	95212	42	369	4	36
25	61499	11	9,41.00454	36	045	4	35
26	66410	05	05690	31	9,9860.720	5	34
27	71315	00	10921	25	394	5	33
28	76215	48.94	16146	20	069	6	32
29	81109	87	21366	15	9,9859.742	6	31
30	85996	82	26581	08	416	6	30
31	90878	76	31789	04	089	7	29
32	95754	71	36993	51.98	9,9858.762	7	28
33	9,40.00625	64	42191	92	434	8	27
34	05489	59	47383	87	106	8	26
35	10348	53	52570	82	9,9857.777	9	25
36	15201	47	57752	76	449	9	24
37	20048	41	62928	71	119	33.0	23
38	24889	35	68099	66	9,9856.790	0	22
39	29724	30	73265	60	460	0	21
40	34554	24	78425	55	129	1	20
41	39378	18	83580	49	9,9855.798	1	19
42	44196	13	88729	45	467	1	18
43	49009	07	93874	39	135	2	17
44	53816	01	99013	33	9,9854.803	2	16
45	58617	47.96	9,42.04146	29	471	2	15
46	63413	90	09275	23	138	3	14
47	68203	84	14398	17	9,9853.805	3	13
48	72987	79	19515	13	471	4	12
49	77766	73	24628	07	138	4	11
50	82539	67	29735	03	9,9852.802	5	10
51	87306	62	34838	50.97	468	5	9
52	92068	56	39935	91	133	5	8
53	96824	51	45026	87	9,9851.798	5	7
54	9,41.01575	45	50113	81	462	6	6
55	06320	39	55194	77	125	7	5
56	11059	34	60271	71	9,9850.789	7	4
57	15793	29	65342	66	45	7	3
58	20522	23	70408	61	114	8	2
59	25245	17	75469	56	9,9849.776	8	1
M.	Co Sine.	Diff.	Ar. Co. Tan	Diff.	Sine.	Diff.	M

75 Degrees.

15 Degrees

M	Sine.	Diff	Tang.	Liff.	Co-Sine.	Diff.	M
0	9,41.29962	47.12	9,42.80525	50.50	9,9849.438	33.8	60
1	34674	07	85575	46	099	9	59
2	39381	01	90621	40	9,9848.760	9	58
3	44082	46.96	95661	36	420	34.0	57
4	48778	90	9,43 00697	30	081	0	56
5	53468	84	05727	26	9,9847.740	0	55
6	58152	80	10753	20	400	1	54
7	62832	74	15773	16	059	1	53
8	67506	68	20789	10	9,9846.717	2	52
9	72174	63	25799	05	375	2	51
10	76837	58	30804	01	033	2	50
11	81495	53	3580	49.95	9,9845 690	3	49
12	86148	47	40800	91	347	3	48
13	90795	41	45791	85	004	3	47
14	95436	37	50776	81	9,9844.660	4	46
15	9,42.00073	31	55757	76	316	4	45
16	04704	26	60733	71	9,9843.971	5	44
17	09330	20	65704	66	626	5	43
18	13950	16	70670	61	281	5	42
19	18566	10	75631	56	9,9842 935	6	41
20	23176	04	80587	51	589	6	40
21	27780	00	85538	47	242	7	39
22	32380	45.94	90485	41	9,9841.895	7	38
23	36974	89	95426	37	548	7	37
24	41563	84	9,44.00363	32	200	8	36
25	46147	79	05295	27	9,9840.852	8	35
26	50726	73	10222	23	503	9	34
27	55299	68	15145	17	154	9	33
28	59867	63	20062	13	9,9839.805	9	32
29	64430	58	24975	08	455	35.0	31
30	68988	53	29883	03	105	0	30
31	73541	48	34786	48.99	9,9838.755	0	29
32	78089	42	39685	94	404	1	28
33	82631	38	44579	89	052	1	27
34	87169	32	49468	84	9,9837.701	2	26
35	91701	27	54352	80	348	2	25
36	96228	22	59232	75	9,9836.996	2	24
37	9,43.00750	17	64107	71	643	3	23
38	05267	12	68978	65	290	3	22
39	09779	07	73843	61	9,9835.936	4	21
40	14286	02	78704	57	582	4	20
41	18788	44.97	83561	52	227	5	19
42	23285	92	88413	47	9,9834.872	5	18
43	27777	87	93260	42	517	5	17
44	32264	82	98102	38	161	6	16
45	36746	77	9,45.02940	34	9,9833.805	6	15
46	41223	71	07774	28	449	6	14
47	45694	67	12602	25	092	7	13
48	50161	62	17427	19	9,9832.735	7	12
49	54623	57	22246	15	377	8	11
50	59080	52	27061	11	019	8	10
51	63532	48	31872	06	9,9831.661	8	9
52	67980	42	36678	01	302	9	8
53	72422	37	41479	47.97	9,9830.942	9	7
54	76859	33	46276	93	583	36.0	6
55	81292	27	51069	88	223	0	5
56	85719	23	55857	84	9,9829.862	1	4
57	90142	18	60641	79	501	1	3
58	94560	13	65420	74	140	1	2
59	98973	08	70194	70	9,9828.778	2	1
M	Co-Sine	Diff.	Ar Co Tang	Diff.	Sine.	Diff.	M

16 Degrees.

	Sine.	Diff.	Tangent.	Diff.	Co. Sine.	Diff.	M
0	9,44.03381	44.03	9,45.74964	47.66	9,9828.416	36.260	
1	07784	43.98	79730	61	054	2.59	
2	12182	94	84491	57	9,9827.691	3.58	
3	16576	89	89248	53	328	3.57	
4	20965	84	94001	48	9,9826.964	4.56	
5	25349	79	98749	43	600	4.55	
6	29728	75	9,46.03492	40	236	4.54	
7	34103	69	08232	35	9,9825.871	5.53	
8	38472	65	12967	30	506	5.52	
9	42837	60	17697	26	140	6.51	
10	47197	56	22423	22	9,9824.774	6.50	
11	51553	51	27145	18	408	6.49	
12	55904	46	31863	13	041	7.48	
13	60250	41	36576	09	9,9823.674	7.47	
14	64591	36	41285	05	306	8.46	
15	68927	32	45990	00	9,9822.938	8.45	
16	73259	27	50690	46.96	569	9.44	
17	77586	23	55386	92	201	9.43	
18	81909	18	60078	87	9,9821.831	9.42	
19	86227	13	64765	83	462	37.041	
20	90540	09	69448	79	092	0.40	
21	94849	04	74127	75	9,9820.721	0.39	
22	99153	42.99	78802	71	351	1.38	
23	9,45.03452	95	83473	66	9,9819.979	1.37	
24	07747	90	88139	62	608	1.36	
25	12037	85	92801	58	236	2.35	
26	16322	81	97459	53	9,9818.863	3.34	
27	20603	76	9,47.02112	50	490	3.33	
28	24879	72	06762	45	117	3.32	
29	29151	67	11407	41	9,9817.744	3.31	
30	33418	63	16048	37	370	4.30	
31	37681	58	20685	33	9,9816.995	5.29	
32	41939	53	25318	29	620	5.28	
33	46192	49	29947	25	245	5.27	
34	50441	45	34572	20	9,9815.870	5.26	
35	54686	40	39192	16	494	6.25	
36	58926	35	43808	13	117	7.24	
37	63161	31	48421	08	9,9814.740	7.23	
38	67392	26	53029	04	363	7.22	
39	71618	22	57633	00	9,9813.986	7.21	
40	75840	18	62233	45.96	608	8.20	
41	80058	13	66829	92	229	9.19	
42	84271	09	71421	88	9,9812.850	9.18	
43	88480	04	76009	83	471	9.17	
44	92684	00	80592	80	091	38.016	
45	96884	41.95	85172	76	9,9811.711	0.15	
46	9,46.01079	91	89748	71	331	0.14	
47	05270	86	94319	68	9,9810.950	1.13	
48	09456	82	98887	64	569	1.12	
49	13638	78	9,48.03451	60	187	2.11	
50	17816	73	08011	55	9,9809.805	2.10	
51	21989	69	12566	52	423	2.09	
52	26158	65	17118	48	040	3.08	
53	30323	60	21666	44	9,9808.657	3.07	
54	34483	56	26210	40	273	4.06	
55	38639	51	30750	36	9,9807.889	4.05	
56	42790	48	35286	32	505	4.04	
57	46938	43	39818	28	120	5.03	
58	51081	38	44346	24	9,9806.735	5.02	
59	55219	34	48870	20	345	6.01	
M	Co Sine	Diff.	Ar Co Tan.	Diff.	Sine	Diff.	M

73 Degrees.

Logarithms of Sines and Tangents.

111

17 Degrees.

M.	Sine.	Diff.	Tang.	Diff.	Co Sine	Diff.	M.
0	9,46.59353	41.30	9,48.53390	45.17	9,9805 963	38.60	0
1	63483	26	57907	12	577	659	1
2	67609	21	62419	09	190	758	2
3	71730	18	66928	05	9,9804.803	757	3
4	75848	12	71433	00	415	856	4
5	79960	09	75933	44.97	027	855	5
6	84069	04	80430	94	9,9803.639	854	6
7	88173	00	84924	89	250	953	7
8	92273	40.96	89413	85	9,9802 860	952	8
9	96369	92	93898	82	471	951	9
10	9,47 00461	87	98380	78	081	39.050	10
11	04548	83	9,49.02858	74	9,9801 690	149	11
12	08631	79	07332	70	299	148	12
13	12710	75	11802	67	9,9800.908	147	13
14	16785	71	16269	62	516	246	14
15	20856	66	20731	59	124	245	15
16	24922	63	25190	56	9,9799.732	244	16
17	28985	58	29646	51	339	343	17
18	33043	54	34097	48	9,9798 946	342	18
19	37097	49	38545	42	552	441	19
20	41146	46	42988	41	158	440	20
21	45192	42	47429	36	9,9797 764	439	21
22	49234	37	51865	33	369	538	22
23	53271	33	56298	29	9,9796.973	537	23
24	57304	30	60727	25	578	536	24
25	61334	25	65152	22	182	635	25
26	65359	21	69574	17	9,9795 785	734	26
27	69380	16	73991	15	388	733	27
28	73396	13	78406	10	9,9794.991	732	28
29	77409	09	82816	07	593	831	29
30	81418	05	87223	03	195	830	30
31	85423	00	91626	00	9,9793.796	929	31
32	89423	39.97	96026	43.96	398	928	32
33	93420	92	9,50 00422	92	9,9792.998	40.027	33
34	97412	89	04814	89	599	026	34
35	9,48 01401	84	09203	85	198	025	35
36	05385	81	13588	81	9,9791.798	024	36
37	09366	76	17969	78	397	123	37
38	13342	73	22347	74	9,9790.996	122	38
39	17315	68	26721	71	594	221	39
40	21283	65	31092	67	192	220	40
41	25248	60	35459	63	9,9789.789	319	41
42	29208	57	39822	60	386	318	42
43	33165	52	44182	56	9,9788.983	317	43
44	37117	49	48538	53	579	416	44
45	41066	44	52891	49	175	415	45
46	45010	41	57240	46	9,9787.770	514	46
47	48951	37	61586	42	365	513	47
48	52888	32	65928	39	9,9786.960	512	48
49	56820	2	70267	35	554	611	49
50	60749	25	74602	31	148	610	50
51	64674	21	78933	28	9,9785.741	79	51
52	68595	17	83261	25	334	78	52
53	72512	14	87586	21	9,9784.927	77	53
54	76426	09	91907	17	519	86	54
55	80335	05	96224	15	111	85	55
56	84240	02	9,51.00539	10	9,9783.702	94	56
57	88142	38.98	04849	07	293	93	57
58	92040	94	09156	04	9,9782.883	92	58
59	95934	90	13460	00	474	41.01	59
M.	Co. Sine.	Diff.	Ar. Co Tang	Diff.	Sine.	Diff.	M.

72 Degrees.

18 Degrees.

M	Sine.	Diff.	Tangent.	Diff.	Co Sine.	Diff.	M
0	9,489.7824	38.86	9,511.7760	42.97	9,978.2063	41.06	0
1	9,490.3710	82	9,512.2057	94	1653	0.59	1
2	7592	79	6351	90	1241	2.58	2
3	9,491.1471	74	9,513.0641	86	0830	1.57	3
4	5345	71	4927	83	0418	2.56	4
5	9216	67	9210	80	0006	2.55	5
6	9,492.3083	63	9,514.3490	76	9,977.9593	3.54	6
7	6946	60	7766	73	9180	3.53	7
8	9,493.0806	55	9,515.2039	70	8766	4.52	8
9	4661	52	6309	66	8353	3.51	9
10	8513	48	9,516.0575	63	7938	5.50	10
11	9,494.2361	44	4838	59	7523	5.49	11
12	6205	41	9097	56	7108	5.48	12
13	9,495.0046	37	9,517.3353	53	6693	5.47	13
14	3883	33	7606	49	6277	6.46	14
15	7716	29	9,518.1855	46	5860	7.45	15
16	9,496.1545	25	6101	43	5444	6.44	16
17	5370	22	9,519.0344	39	5026	8.43	17
18	9192	18	4583	36	4609	7.42	18
19	9,497.3010	14	8819	33	4191	8.41	19
20	6824	11	9,520.3052	30	3772	9.40	20
21	9,498.0635	07	7282	26	3354	8.39	21
22	4442	03	9,521.1508	22	2934	42.038	22
23	8245	00	5730	20	2515	9.37	23
24	9,499.2045	37.95	9959	16	2095	0.36	24
25	5840	93	9,522.4166	13	1674	1.35	25
26	9633	88	8379	10	1253	1.34	26
27	9,500.3421	85	9,523.2589	06	0832	1.33	27
28	7206	81	6795	04	0410	2.32	28
29	9,501.0987	77	9,524.0999	00	9,976.9988	2.31	29
30	4764	74	5199	41.96	9566	2.30	30
31	8538	70	9395	94	9143	3.29	31
32	9,502.2308	67	9,525.3589	90	8720	3.28	32
33	6075	63	7779	87	8296	4.27	33
34	9838	59	9,526.1966	84	7872	4.26	34
35	9,503.3597	56	6150	81	7447	5.25	35
36	7353	52	9,527.0331	77	7022	5.24	36
37	9,504.1105	48	4508	74	6597	5.23	37
38	4853	45	8682	71	6171	6.22	38
39	8598	41	9,528.2853	68	5745	6.21	39
40	9,505.2339	38	7021	65	5318	7.20	40
41	6077	34	9,529.1186	61	4891	7.19	41
42	9811	31	5347	58	4464	7.18	42
43	9,506.3542	27	9505	56	4036	8.17	43
44	7269	23	9,530.3661	52	3608	8.16	44
45	9,507.0992	20	7813	48	3179	9.15	45
46	4712	16	9,531.1961	46	2750	9.14	46
47	8428	13	6107	43	2321	9.13	47
48	9,508.2141	09	9,532.0250	39	1891	43.012	48
49	5850	06	4389	37	1461	0.11	49
50	9556	02	8526	33	1030	1.10	50
51	9,509.3258	36.98	9,533.2659	30	0599	1.9	51
52	6956	95	6789	27	0167	2.8	52
53	9,510.0651	92	9,534.0916	24	9,975.9736	1.7	53
54	4343	88	5040	21	9303	3.6	54
55	8031	85	9161	17	8800	3.5	55
56	9,511.1716	81	9,535.3278	15	8437	3.4	56
57	5397	77	7393	12	8004	3.3	57
58	9074	75	9,536.1505	08	7570	4.2	58
59	9,512.2749	70	5613	06	7135	5.1	59
	Co Sine.	Diff.	Ar. Co. Tan.	Diff.	Sine.	Diff.	M

71 Degrees.

19 Degrees.

M	Sine.	Diff.	Tang.	Diff.	Co Sine	Diff.	M
0	9,512.6419	36.67	9,536.9719	41.02	9,975.6701	43.46	60
1	9,513.0086	64	9,537.3821	40.99	6265	6	59
2	3750	60	7920	97	5830	5	58
3	7410	57	9,538.2017	93	5394	6	57
4	9,514.1067	54	6110	90	4957	7	56
5	4721	50	9,539.0200	87	4521	6	55
6	8371	46	4287	84	4083	8	54
7	9,515.2017	43	8371	82	3646	7	53
8	5660	40	9,540.2453	78	3208	8	52
9	9300	36	6531	75	2769	9	51
10	9,516.2936	33	9,541.0606	72	2330	9	50
11	6569	29	4678	69	1891	9	49
12	9,517.0198	26	8747	66	1451	0	48
13	3824	23	9,542.2813	64	1011	44.0	47
14	7447	19	6877	60	0570	1	46
15	9,518.1066	16	9,543.0937	57	0129	1	45
16	4682	13	4994	54	9,974.9688	1	44
17	8295	09	9048	52	9246	2	43
18	9,519.1904	06	9,544.3100	48	8804	2	42
19	5510	02	7148	45	8361	3	41
20	9112	35.99	9,545.1193	43	7918	3	40
21	9,520.2711	96	5236	40	7475	3	39
22	6307	92	9276	36	7031	4	38
23	9899	89	9,546.3312	34	6587	4	37
24	9,521.3488	86	7346	31	6142	5	36
25	7074	82	9,547.1377	28	5697	5	35
26	9,522.0656	79	5405	25	5252	5	34
27	4235	76	9430	22	4806	6	33
28	7811	72	9,548.3452	19	4359	7	32
29	9,523.1383	70	7471	16	3913	6	31
30	4953	65	9,549.1487	13	3466	7	30
31	8518	63	5500	11	3018	8	29
32	9,524.2081	59	9511	08	2570	8	28
33	5640	56	9,550.3519	04	2122	8	27
34	9196	53	7523	02	1673	9	26
35	9,525.2749	49	9,551.1525	39.99	1224	9	25
36	6298	46	5524	97	0774	45.0	24
37	9844	43	9521	93	0324	0	23
38	9,526.3387	40	9,552.3514	90	9,973.9873	1	22
39	6927	36	7504	88	9422	1	21
40	9,527.0463	34	9,553.1492	85	8971	1	20
41	3197	29	5477	82	8519	2	19
42	7526	27	9459	79	8067	2	18
43	9,528.1053	24	9,554.3438	77	7615	2	17
44	4577	20	7415	73	7162	3	16
45	8097	17	9,555.1388	71	6709	3	15
46	9,529.1614	14	5359	68	6255	4	14
47	5128	10	9327	65	5801	4	13
48	8638	08	9,556.3292	63	5346	5	12
49	9,530.2146	04	7255	59	4891	5	11
50	5650	01	9,557.1214	57	4435	6	10
51	9151	34.98	5171	54	3980	5	9
52	9,531.2649	94	9125	52	3523	7	8
53	6143	92	9,558.3077	48	3067	6	7
54	9635	88	7025	46	2610	7	6
55	9,532.3123	85	9,559.0971	43	2152	8	5
56	6608	82	4914	40	1694	8	4
57	9,533.0090	79	8854	38	1236	8	3
58	3569	75	9,560.2792	35	0777	9	2
59	7044	73	6727	32	0318	0	1
M	Co Sine.	Diff.	ArCo Tang.	Diff.	Sine.	Diff.	M

70 Degrees.

P

20 Degrees.

M	Sine.	Diff.	Tangent.	Diff.	Co. Sine.	Diff.	M
0	9,534.0517	346.9	9,561.0659	392.9	9,972.9858	46.0	60
1	3986	0	4588	7	9398	0	59
2	7452	3	8515	4	8938	0	58
3	9,535.0915	0	9,562.2439	1	8477	2	57
4	4375	345.7	6360	391.8	8016	1	56
5	7832	4	9,563.0278	6	7554	2	55
6	9,536.1286	1	4194	3	7092	2	54
7	4737	344.7	8107	1	6629	3	53
8	8184	5	9,564.2018	390.7	6166	3	52
9	9,537.1629	1	5925	6	5703	3	51
10	5070	343.8	9831	2	5239	4	50
11	8508	5	9,565.3733	0	4775	4	49
12	9,538.1943	2	7633	389.7	4310	5	48
13	5375	342.9	9,566.1530	4	3845	5	47
14	8804	6	5424	2	3380	5	46
15	9,539.2230	3	9316	388.9	2914	6	45
16	5653	0	9,567.3205	6	2448	6	44
17	9073	341.6	7091	4	1981	7	43
18	9,540.2489	4	9,568.0975	1	1514	7	42
19	5903	1	4856	387.9	1047	7	41
20	9314	340.7	8735	6	0579	8	40
21	9,541.2721	5	9,569.2611	3	0110	9	39
22	6126	1	6484	1	9,971.9642	8	38
23	9527	339.9	9,570.0355	386.8	9172	47.0	37
24	9,542.2926	5	4223	5	8703	46.9	36
25	6321	2	8088	3	8233	47.0	35
26	9713	0	9,571.1951	0	7762	1	34
27	9,543.3103	338.6	5811	385.8	7291	1	33
28	6489	4	9669	5	6820	1	32
29	9873	0	9,572.3524	3	6348	2	31
30	9,544.3253	337.7	7377	0	5876	2	30
31	6630	5	9,573.1227	384.7	5404	3	29
32	9,545.0005	1	5074	5	4931	4	28
33	3376	336.9	8919	2	4457	3	27
34	6745	5	9,574.2761	0	3984	5	26
35	9,546.0110	2	6601	383.7	3509	4	25
36	3472	0	9,575.0438	4	3035	5	24
37	6832	335.7	4272	2	2560	6	23
38	9,547.0189	3	8104	0	2084	6	22
39	3542	1	9,576.1934	382.7	1608	6	21
40	6893	334.7	5761	4	1132	7	20
41	9,548.0240	5	9585	2	0655	7	19
42	3585	2	9,577.3407	381.9	0178	7	18
43	6927	333.9	7226	7	9,970.9701	8	17
44	9,549.0266	6	9,578.1043	5	9223	9	16
45	3602	3	4858	1	8744	9	15
46	6935	0	8669	0	8265	9	14
47	9,550.0265	332.7	9,579.2479	380.7	7786	48.0	13
48	3592	4	6286	4	7306	0	12
49	6916	1	9,580.0090	2	6826	0	11
50	9,551.0237	331.9	3892	379.9	6346	1	10
51	3556	5	7691	7	5865	2	9
52	6871	3	9,581.1488	4	5383	1	8
53	9,552.0184	0	5282	2	4902	3	7
54	3494	330.7	9074	0	4419	2	6
55	6801	4	9,582.2864	378.7	3937	3	5
56	9,553.0105	1	6651	4	345	4	4
57	3406	329.8	9,583.0435	2	2970	4	3
58	6704	5	4217	0	2486	4	2
59	9999	3	7997	377.7	2002	5	1
M	Co. Sine.	Diff.	ArCo. Tang	Diff.	Sine.	Diff.	M

69 Degrees.

Logarithms of Sines and Tangents.

I 5

21 Degrees

M	Sine.	Diff.	Tangent.	Diff.	Co Sine.	Diff.	M
0	9,554.3292	328.9	9,584.1774	377.5	9,970.1517	48.5	60
1	6581	7	5549	2	1032	5	59
2	9868	4	9321	0	0547	5	58
3	9,555.3152	1	9,585.3091	376.8	0061	6	57
4	6433	327.8	6859	5	9,969.9574	7	56
5	9711	6	9,586.0624	2	9087	7	55
6	9,556.2987	2	4386	1	8600	7	54
7	6259	0	8147	375.7	8112	8	53
8	9529	326.7	9,587.1904	6	7624	8	52
9	9,557.2796	4	5660	3	7136	8	51
10	6060	1	9413	0	6647	9	50
11	9321	325.8	9,588.3163	374.9	6158	9	49
12	9,558.2579	6	6912	5	5668	49.0	48
13	5835	3	9,589.0657	4	5177	1	47
14	9088	0	4401	1	4687	0	46
15	9,559.2338	324.7	8142	373.9	4196	1	45
16	5585	4	9,590.1881	6	3704	2	44
17	8829	2	5617	4	3212	2	43
18	9,560.2071	323.9	9351	1	2720	2	42
19	5310	6	9,591.3082	0	2227	3	41
20	8546	3	6812	372.7	1734	3	40
21	9,561.1779	1	9,592.0539	4	1241	4	39
22	5010	322.7	4263	2	0746	4	38
23	8237	5	7985	0	0252	5	37
24	9,562.1462	3	9,593.1705	371.8	9,968.9757	5	36
25	4685	321.9	5423	5	9262	6	35
26	7904	7	9138	3	8766	6	34
27	9,563.1121	4	9,594.2851	0	8270	7	33
28	4335	1	6561	370.8	7773	7	32
29	7546	320.8	9,595.0269	6	7276	7	31
30	9,564.0754	6	3975	4	6779	8	30
31	3960	3	7679	1	6281	8	29
32	7163	0	9,596.1380	369.9	5783	9	28
33	9,565.0363	319.8	5079	7	5284	9	27
34	3561	5	8776	4	4785	9	26
35	6756	2	9,597.2470	2	4286	50.0	25
36	9948	318.9	6162	0	3786	1	24
37	9,566.3137	7	9852	368.8	3285	1	23
38	6324	4	9,598.3540	5	2784	1	22
39	9508	1	7225	3	2283	2	21
40	9,567.2689	317.9	9,599.0908	0	1781	2	20
41	5868	6	4588	367.9	1279	2	19
42	9044	3	8267	6	0777	3	18
43	9,568.2217	0	9,600.1943	4	0274	3	17
44	5387	316.8	5617	2	9,967.9771	4	16
45	8555	6	9289	366.9	9267	4	15
46	9,569.1721	2	9,601.2958	7	8763	5	14
47	4883	0	6625	5	8258	5	13
48	8043	315.7	9,602.0290	3	7753	6	12
49	9,570.1200	5	3953	0	7247	6	11
50	4355	1	7613	365.8	6741	6	10
51	7506	0	9,603.1271	6	6235	7	9
52	9,571.0656	314.6	4927	4	5728	7	8
53	3802	4	8581	2	5221	8	7
54	6946	1	9,604.2233	364.9	4713	8	6
55	9,572.0087	313.9	5882	7	4205	8	5
56	3226	6	9529	5	3697	9	4
57	6362	3	9,605.3174	3	3188	9	3
58	9495	1	6817	0	2679	51.0	2
59	9,573.2626	312.8	9,606.0457	363.9	2169	0	1
M	Co. Sine.	Diff.	ArCo Tang	Diff.	Sine.	Diff.	M

68 Degrees.

22 Degrees.

M	Sine.	Diff.	Tangent.	Diff.	Co. Sine.	Diff.	M
0	9,573.5754	312.6	9,606.4096	363.6	9,967.1659	51.0	60
1	8880	3	7732	4	1148	1	59
2	9,574.2003	0	9,607.1366	1	0637	2	58
3	5123	311.7	4997	0	0125	1	57
4	8240	6	8627	362.7	9,966.9614	3	56
5	9,575.1356	2	9,608.2254	6	9101	3	55
6	4468	0	5880	3	8588	3	54
7	7578	310.7	9503	1	8075	3	53
8	9,576.0685	5	9,609.3124	361.8	7562	4	52
9	3790	2	6742	7	7048	5	51
10	6892	309.9	9,610.0359	4	6533	5	50
11	9991	7	3973	3	6018	5	49
12	9,577.3088	5	7586	0	5503	6	48
13	6183	2	9,611.1196	360.8	4987	6	47
14	9275	208.9	4804	5	4471	7	46
15	9,578.2364	6	8409	4	3954	7	45
16	5450	5	9,612.2013	2	3437	7	44
17	8535	1	5615	359.9	2920	8	43
18	9,579.1616	307.9	9214	8	2402	8	42
19	4695	7	9,613.2812	5	1884	9	41
20	7772	3	6407	3	1365	9	40
21	9,580.0845	2	9,614.0000	1	0846	52.0	39
22	3917	306.9	3591	358.9	0326	0	38
23	6986	6	7180	6	9,965.9806	1	37
24	9,581.0052	4	9,615.0766	5	9285	1	36
25	3116	1	4351	3	8764	1	35
26	6177	305.9	7934	0	8243	2	34
27	9236	6	9,616.1514	357.9	7721	2	33
28	9,582.2292	3	5093	6	7199	2	32
29	5345	2	8669	4	6677	4	31
30	8397	304.8	9,617.2243	2	6153	3	30
31	9,583.1445	6	5815	0	5630	4	29
32	4491	4	9385	356.8	5106	4	28
33	7535	1	9,618.2953	6	4582	5	27
34	9,584.0576	303.9	6519	4	4057	5	26
35	3615	6	9,619.0083	2	3532	6	25
36	6651	4	3645	0	3006	6	24
37	9685	1	7205	355.7	2480	7	23
38	9,585.2716	302.9	9,620.0762	6	1953	7	22
39	5745	6	4318	4	1426	7	21
40	8771	4	7872	1	0899	8	20
41	9,586.1795	1	9,621.1423	0	0371	8	19
42	4816	301.9	4973	354.7	9,964.9843	9	18
43	7835	6	8520	6	9314	9	17
44	9,587.0851	4	9,622.2066	3	8785	9	16
45	3865	1	5609	1	8256	53.0	15
46	6876	300.9	9150	0	7726	1	14
47	9885	7	9,623.2690	353.7	7195	0	13
48	9,588.2892	4	6227	6	6665	2	12
49	5896	1	9763	3	6133	1	11
50	8897	0	9,624.3296	1	5602	3	10
51	9,589.1897	299.6	6827	352.9	5069	2	9
52	4893	5	9,625.0356	8	4537	3	8
53	7888	2	3884	5	4004	4	7
54	9,590.0880	298.9	7409	3	3470	3	6
55	3869	7	9,626.0932	2	2937	5	5
56	6856	5	4454	351.9	2402	4	4
57	9841	2	7973	8	1868	6	3
58	9,591.2823	0	9,627.1491	5	1332	5	2
59	5803	297.7	5006	3	0797	6	1
M	Co. Sine.	Diff.	Ar. Co. Tan.	Diff.	Sine.	Diff.	M

67 Degrees.

23 Degrees

	i. e.	Diff.	Tang	Diff.	Co Sine.	Diff.	
0	9,591.8780	297.5	9,627.8519	351.2	9,964.0261	53.6	60
1	9,592.1755	3	9,628.2031	350.9	9,963.9724	7	59
2	4728	0	5540	8	9187	7	58
3	7698	296.8	9048	5	8650	7	57
4	9,593.0666	5	9,629.2553	4	8112	8	56
5	3631	3	6057	1	7574	8	55
6	6594	1	9558	0	7036	8	54
7	9555	295.8	9,630.3058	349.8	6496	9	53
8	9,594.2513	6	6556	6	5957	9	52
9	5469	3	9,631.0052	3	5417	54.0	51
10	8422	1	3545	2	4877	0	50
11	9,595.1373	294.9	7037	0	4336	1	49
12	4322	6	9,632.0527	348.8	3795	1	48
13	7268	4	4015	6	3253	2	47
14	9,596.0212	2	7501	4	2711	2	46
15	3154	293.9	9,633.0985	3	2168	3	45
16	6093	7	4468	0	1625	3	44
17	9030	5	7948	347.8	1082	3	43
18	9,597.1965	2	9,634.1426	7	0538	4	42
19	4897	0	4903	5	9,962.9994	4	41
20	7827	292.7	8378	2	9449	5	40
21	9,598.0754	5	9,635.1850	1	8904	5	39
22	3679	3	5321	346.9	8358	6	38
23	6602	1	8790	7	7812	6	37
24	9523	291.8	9,636.2257	5	7266	6	36
25	9,599.2441	6	5722	3	6719	7	35
26	5357	3	9185	1	6172	7	34
27	8270	1	9,637.2646	0	5624	8	33
28	9,600.1181	290.9	6106	345.7	5076	8	32
29	4090	7	9563	6	4527	9	31
30	6997	4	9,638.3019	4	3978	9	30
31	9901	2	6473	2	3428	55.0	29
32	9,601.2803	0	9925	0	2878	0	28
33	5703	289.7	9,639.3375	344.8	2328	0	27
34	8600	5	6823	6	1777	1	26
35	9,602.1495	3	9,640.0269	5	1226	1	25
36	4388	0	3744	2	0674	2	24
37	7278	288.8	7156	1	0122	2	23
38	9,603.0166	6	9,641.0597	343.9	9,961.9569	3	22
39	3952	4	4036	7	9016	3	21
40	5936	1	7473	5	8463	3	20
41	8817	287.9	9,642.0908	4	7909	4	19
42	9,604.1696	7	4342	1	7355	4	18
43	4573	5	7773	0	6800	5	17
44	7448	2	9,643.1203	342.8	6245	5	16
45	9,605.0320	0	4631	6	5689	6	15
46	3190	286.7	8057	4	5133	6	14
47	6057	6	9,644.1481	2	4576	6	13
48	8923	3	4903	1	4020	6	12
49	9,606.1786	1	8324	341.9	3463	8	11
50	4647	285.9	9,645.1743	7	2904	8	10
51	7506	6	5160	5	2346	9	9
52	9,607.0362	4	8575	3	1787	9	8
53	3216	2	9,646.1988	2	1228	9	7
54	6068	0	5400	0	0668	56.0	6
55	8918	284.7	8810	340.7	0108	0	5
56	9,608.1765	6	9,647.2217	7	9,960.9548	0	4
57	4611	3	5624	4	8987	1	3
58	7454	0	9028	3	8426	1	2
59	9,609.0294	283.9	9,648.2431	0	7864	2	1
M.	Co Sine.	Diff.	Ar. Co. Tan.	Diff.	Sine.	Diff.	M.

66 Degrees

24 Degrees.

M	Sine.	Diff.	Tang n.	Diff.	Co Sine.	Diff.	M
0	9,609.3133	283.6	9,648.5831	339.9	9,960.7302	56.2	60
1	5969	4	9230	8	6739	3	59
2	8803	2	9,649.2628	5	6176	3	58
3	9,610.1635	0	6023	4	5612	4	57
4	4465	282.8	9417	2	5048	4	56
5	7293	5	9,650.2809	0	4484	4	55
6	9,611.0118	3	6199	338.8	3919	5	54
7	2941	1	9587	7	3354	5	53
8	5762	281.8	9,651.2974	5	2788	6	52
9	8580	7	6359	3	2222	6	51
10	9,612.1397	4	9742	1	1655	7	50
11	4211	2	9,652.3123	0	1088	7	49
12	7023	0	6503	337.8	0520	8	48
13	9833	280.8	9881	6	9,959.9952	8	47
14	9,613.2641	5	9,653.3257	4	9384	8	46
15	5446	4	6631	3	8815	9	45
16	8250	1	9,654.0004	1	8246	9	44
17	9,614.1051	279.9	3375	336.9	7676	57.0	43
18	3850	7	6744	8	7106	0	42
19	6647	4	9,655.0112	5	6535	1	41
20	9441	3	3477	4	5964	1	40
21	9,615.2234	0	6841	3	5393	1	39
22	5024	278.8	9,656.0204	0	4821	2	38
23	7812	7	3564	335.9	4248	3	37
24	9,616.0599	3	6923	7	3675	3	36
25	3382	2	9,657.0280	6	3102	3	35
26	6164	0	3636	3	2528	4	34
27	8944	277.7	6989	2	1954	4	33
28	9,617.1721	5	9,658.0341	1	1380	4	32
29	4496	4	3692	334.9	0805	5	31
30	7270	1	7041	6	0229	6	30
31	9,618.0041	276.8	9,659.0387	6	9,958.9653	6	29
32	2809	7	3733	3	9077	6	28
33	5576	5	7076	2	8500	7	27
34	8341	2	9,660.0418	0	7923	7	26
35	9,619.1103	1	3758	333.9	7345	8	25
36	3864	275.8	7097	7	6767	8	24
37	6622	6	9,661.0434	5	6188	9	23
38	9378	4	3769	4	5609	9	22
39	9,620.2132	2	7103	1	5030	9	21
40	4884	0	9,662.0434	1	4450	58.0	20
41	7634	274.8	3765	332.8	3869	1	19
42	9,621.0382	5	7093	7	3288	1	18
43	3127	4	9,663.0420	5	2707	1	17
44	5871	1	3745	4	2125	2	16
45	8612	273.9	7069	2	1543	2	15
46	9,622.1351	7	9,664.0391	0	0961	2	14
47	4088	6	3711	331.9	0378	3	13
48	6824	3	7030	6	9,957.9794	4	12
49	9557	0	9,665.0346	6	9210	4	11
50	9,623.2287	272.9	3662	3	8626	4	10
51	5016	7	6975	3	8041	5	9
52	7743	5	9,666.0288	0	7456	5	8
53	9,624.0468	2	3598	330.9	6870	6	7
54	3190	1	6907	7	6284	6	6
55	5911	271.8	9,667.0214	5	5697	7	5
56	8629	7	3519	4	5110	7	4
57	9,625.1346	4	6823	3	4522	8	3
58	4060	2	9,668.0126	0	3934	8	2
59	6772	1	3426	329.9	3346	8	1
M	Co Sine	Diff.	Ar Co.Tan.	Diff.	Sine.	Diff.	M

65 Degrees.

25 Degrees.

M.	Sine.	Diff.	Tang.	Diff.	Co Sine.	Diff.	M
0	9,625 9483	270.8	9,668.6725	329.8	9,957.2757	58.9	60
1	9,626.2191	6	9,669.0023	6	2168	9	59
2	4897	4	3319	4	1578	59.0	58
3	7601	2	6613	3	0988	0	57
4	9,627.0303	0	9906	1	0397	1	56
5	3003	269.8	9,670.3197	328.9	9,956.9806	1	55
6	5701	6	6486	8	9215	1	54
7	8397	3	9774	6	8623	2	53
8	9,628.1090	2	9,671.3060	5	8030	3	52
9	3782	0	6345	3	7437	3	51
10	6472	268.8	9628	2	6844	3	50
11	9160	5	9,672.2910	0	6250	4	49
12	9,629.1845	4	6190	327.8	5656	4	48
13	4529	2	9468	7	5061	5	47
14	7211	267.9	9,673.2745	5	4466	5	46
15	9890	8	6020	4	3870	6	45
16	9,630.2568	5	9294	2	3274	6	44
17	5243	4	9,674.2566	0	2678	6	43
18	7917	2	5836	326.9	2081	7	42
19	9,631 0589	266.9	9105	7	1483	8	41
20	3258	8	9,675.2372	6	0886	7	40
21	5926	5	5638	5	0287	9	39
22	8591	4	8902	2	9,955.9689	8	38
23	9,632 1255	1	9,676.2165	1	9089	60.0	37
24	3916	0	5426	0	8490	59.9	36
25	6576	265.7	8686	325.8	7890	60.0	35
26	9233	6	9,677.1944	7	7289	1	34
27	9,633.1889	3	5201	5	6688	1	33
28	4542	2	8456	3	6087	1	32
29	7194	0	9,678.1709	2	5485	2	31
30	9844	264.7	4961	0	4882	3	30
31	9,634.2491	6	8211	324.9	4280	2	29
32	5137	3	9,679.1460	8	3676	4	28
33	7780	2	4708	5	3073	3	27
34	9,635 0422	0	7953	5	2469	4	26
35	3062	263.7	9,680.1198	2	1864	5	25
36	5699	6	4440	2	1259	5	24
37	8335	4	7682	323.9	0653	6	23
38	9,636.0969	2	9,681.0921	9	0047	6	22
39	3601	0	4160	6	9,954.9441	6	21
40	6231	262.8	7396	6	8834	7	20
41	8859	5	9,682.0632	3	8227	7	19
42	9,637.1484	4	3865	3	7619	8	18
43	4108	3	7098	0	7011	8	17
44	6731	0	9,683 0328	322.9	6402	9	16
45	9351	261.8	3557	8	5793	9	15
46	9,638 1969	6	6785	6	5184	9	14
47	4585	4	9,684.0011	5	4574	61.0	13
48	7199	3	3236	3	3963	1	12
49	9812	0	6459	2	3352	1	11
50	9,639 2422	260.8	9681	0	2741	1	10
51	5030	7	9,685.2901	321.9	2129	2	9
52	7637	4	6120	8	1517	2	8
53	9,640 0241	3	9338	5	0904	3	7
54	2844	1	9,686.2553	5	0291	3	6
55	5445	259.9	5768	3	9,953.9677	4	5
56	8044	6	8981	1	9063	4	4
57	9,641 0640	5	9,687.2192	0	8448	5	3
58	3235	3	5402	320.9	7833	5	2
59	5828	2	8611	7	7218	5	1
M.	Co. Sine	Diff.	ArCo Tang	Diff.	Sine.	Diff.	M

26 Degrees

M	Sine	Diff.	Tangent	Diff.	Co. sine	Diff.	M
0	9,641.8420	258.9	9,688.1818	320.5	9,953.6602	61.660	
1	9,642.1009	7	5023	4	5985	759	
2	3596	6	8227	3	5369	658	
3	6182	3	9,689.1430	1	4751	857	
4	8765	2	4631	0	4134	756	
5	9,643.1347	257.9	7831	319.9	3515	955	
6	3926	8	9,690.1030	6	2897	854	
7	6504	6	4226	6	2278	953	
8	9080	4	7422	4	1658	62.052	
9	9,644.1654	2	9,691.0616	3	1038	051	
10	4226	0	3809	1	0418	050	
11	6796	256.9	7000	318.9	9,952.9797	149	
12	9365	6	9,692.0189	9	9175	248	
13	9,645.1931	5	3378	7	8553	247	
14	4496	2	6565	5	7931	246	
15	7058	1	9750	4	7308	345	
16	9619	255.9	9,693.2934	3	6685	344	
17	9,646.2178	7	6117	1	6061	443	
18	4735	5	9298	0	5437	442	
19	7290	4	9,694.2478	317.8	4813	441	
20	9844	1	5656	7	4188	540	
21	9,647.2395	0	8833	6	3562	639	
22	4945	254.7	9,695.2009	4	2936	638	
23	7492	6	5183	2	2310	637	
24	9,648.0038	4	8355	2	1683	736	
25	2582	2	9,696.1527	0	1055	835	
26	5124	1	4697	316.8	0428	734	
27	7665	253.8	7865	7	9,951.9799	933	
28	9,649.0203	7	9,697.1032	6	9171	832	
29	2740	4	4198	5	8541	63.031	
30	5274	3	7363	3	7912	62.930	
31	7807	1	9,698.0526	1	7282	63.029	
32	9,650.0338	0	3687	0	6651	128	
33	2868	252.7	6847	315.9	6020	127	
34	5395	5	9,699.0006	8	5389	126	
35	7920	4	3164	6	4757	225	
36	9,651.0444	2	6320	4	4124	324	
37	2966	0	9474	4	3492	223	
38	5486	251.8	9,700.2628	2	2858	422	
39	8004	7	5780	0	2224	421	
40	9,652.0521	4	8930	0	1590	420	
41	3035	3	9,701.2080	314.7	0956	419	
42	5548	1	5227	7	0320	618	
43	8059	250.9	8374	5	9,950.9685	517	
44	9,653.0568	7	9,702.1519	4	9049	616	
45	3075	6	4663	2	8412	715	
46	5581	3	7805	1	7775	714	
47	8084	2	9,703.0946	0	7138	713	
48	9,654.0586	0	4086	313.9	6500	812	
49	3086	249.8	7225	7	5861	911	
50	5584	7	9,704.0362	5	5223	810	
51	8081	4	3497	5	4583	64.09	
52	9,655.0575	3	6632	3	3944	63.98	
53	3068	1	9765	2	3303	64.17	
54	5559	248.9	9,705.2897	0	2663	06	
55	8048	8	6027	312.9	2022	15	
56	9,656.0536	5	9156	8	1380	24	
57	3021	4	9,706.2284	6	0738	23	
58	5505	2	5410	5	0095	32	
59	7987	1	8535	4	9,949.9452	31	
M	Co Sine.	Diff.	ArCo Tang.	Diff.	Sine.	Diff.	M

63 Degrees

27 Degrees

M	Sine.	Diff.	Tang.	Diff.	Co Sine.	Diff.	M
0	9,657.0468	247.8	9,707.1659	312.2	9,949.8809	64.3	60
1	2946	7	4781	1	8165	4	59
2	5423	5	7902	0	7521	4	58
3	7898	3	9,708.1022	311.9	6876	5	57
4	9,658.0371	1	4141	7	6230	6	56
5	2842	0	7258	6	5585	5	55
6	5312	246.8	9,709.0374	4	4938	7	54
7	7780	6	3488	3	4292	6	53
8	9,659.0246	4	6601	2	3645	7	52
9	2710	3	9713	1	2997	8	51
10	5173	0	9,710.2824	310.9	2349	8	50
11	7633	0	5933	8	1700	9	49
12	9,660.0093	245.7	9041	7	1051	9	48
13	2550	5	9,711.2148	6	0402	9	47
14	5005	4	5254	4	9,948.9752	65.0	46
15	7459	2	8358	3	9101	1	45
16	9911	0	9,712.1461	1	8450	1	44
17	9,661.2361	244.9	4562	0	7799	1	43
18	4810	7	7662	309.9	7147	2	42
19	7257	5	9,713.0791	8	6495	2	41
20	9701	3	3859	7	5842	3	40
21	9,662.2145	1	6956	5	5189	3	39
22	4586	0	9,714.0051	4	4535	4	38
23	7026	243.8	3145	2	3881	4	37
24	9464	6	6237	2	3227	4	36
25	9,663.1900	4	9329	0	2572	5	35
26	4335	3	9,715.2419	308.9	1916	6	34
27	6768	1	5508	7	1260	6	33
28	9199	242.9	8595	7	0604	6	32
29	9,664.1628	8	9,716.1682	5	9,947.9947	7	31
30	4056	6	4767	4	9289	8	30
31	6482	4	7851	2	8631	8	29
32	8906	3	9,717.0933	1	7973	8	28
33	9,665.1329	0	4014	0	7314	9	27
34	3749	241.9	7094	307.9	6655	9	26
35	6168	8	9,718.0173	8	5995	66.0	25
36	8586	5	3251	6	5335	0	24
37	9,666.1001	4	6327	5	4674	1	23
38	3415	3	9402	4	4013	1	22
39	5828	0	9,719.2476	3	3352	1	21
40	8238	240.9	5546	1	2689	3	20
41	9,667.0647	7	8620	0	2027	2	19
42	3054	5	9,720.1690	306.9	1364	3	18
43	5459	4	4759	8	0700	4	17
44	7863	2	7827	6	0036	4	16
45	9,668.0265	0	9,721.0893	5	9,946.9372	4	15
46	2665	239.9	3958	4	8707	5	14
47	5064	7	7022	3	8042	5	13
48	7461	5	9,722.0085	2	7376	6	12
49	9856	4	3147	0	6710	6	11
50	9,669.2250	2	6207	305.9	6043	7	10
51	4642	0	9266	8	5376	7	9
52	7032	238.8	9,723.2324	7	4708	8	8
53	9420	7	5381	5	4040	8	7
54	9,670.1807	5	8436	4	3371	9	6
55	4192	4	9,724.1490	3	2702	9	5
56	6576	2	4543	2	2032	67.0	4
57	8958	0	7595	1	1362	0	3
58	9,671.1338	237.8	9,725.0646	304.9	0692	0	2
59	3716	7	3695	9	0021	1	1
M.	Co Sine.	Diff.	Ar. Co. Tan.	Diff.	Sine.	Diff.	M

62 Degrees

Q

28 Degrees.

M	Sine.	Diff.	Tangent.	Diff.	Co. Sine	Diff.	M
0	9,671.6093	237.5	9,725.6744	304.7	9,945.9349	67.2	60
1	8468	3	9791	6	8677	2	59
2	9,672.0841	236.9	9,726.2837	4	8005	2	58
3	3213	0	5881	4	7332	3	57
4	5583	235.9	8925	2	6659	3	56
5	7952	7	9,727.1967	1	5985	4	55
6	9,673.0319	5	5008	0	5310	5	54
7	2684	3	8048	303.9	4636	4	53
8	5047	2	9,728.1087	7	3960	6	52
9	7409	0	4124	7	3285	5	51
10	9769	235.9	7161	5	2609	6	50
11	9,674.2128	7	9,729.0196	4	1932	7	49
12	4485	5	3230	3	1255	7	48
13	6840	4	6263	2	0577	8	47
14	9194	2	9295	0	9,944.9899	8	46
15	9,675.1546	0	9,730.2325	302.9	9220	9	45
16	3896	234.9	5354	9	8541	9	44
17	6245	7	8383	7	7862	9	43
18	8592	5	9,731.1410	6	7182	68.0	42
19	9,676.0937	4	4436	4	6501	1	41
20	3281	2	7460	4	5821	0	40
21	5623	0	9,732.0484	2	5139	2	39
22	7963	233.9	3506	1	4457	2	38
23	9,677.0302	8	6527	0	3775	2	37
24	2610	5	9547	301.9	3092	3	36
25	4975	4	9,733.2566	8	2409	3	35
26	7309	3	5584	7	1725	4	34
27	9642	0	8601	5	1041	4	33
28	9,678.1972	232.9	9,734.1616	5	0356	5	32
29	4301	8	4631	3	9,943.9671	5	31
30	6629	6	7644	2	8985	6	30
31	8955	4	9,735.0656	1	8299	6	29
32	9,679.1279	3	3667	0	7612	7	28
33	3602	1	6677	300.8	6925	7	27
34	5923	0	9685	8	6238	7	26
35	8243	231.7	9,736.2693	6	5549	9	25
36	9,680.0560	7	5699	6	4861	8	24
37	2877	4	8705	4	4172	9	23
38	5191	3	9,737.1709	3	3482	69.0	22
39	7504	2	4712	2	2792	0	21
40	9816	0	7714	1	2102	0	20
41	9,681.2126	230.8	9,738.0715	299.9	1411	1	19
42	4434	7	3714	9	0720	1	18
43	6741	5	6713	7	0028	2	17
44	9046	3	9710	7	9,942.9235	3	16
45	9,682.1349	2	9,739.2707	5	8643	2	15
46	3651	1	5702	4	7949	4	14
47	5952	229.8	8696	3	7255	4	13
48	8250	8	9,740.1689	2	6561	4	12
49	9,683.0548	5	4681	1	5866	5	11
50	2843	4	7672	0	5171	5	10
51	5137	3	9,741.0662	298.8	4476	5	9
52	7430	0	3650	8	3779	7	8
53	9720	0	6638	6	3083	6	7
54	9,684.2010	228.7	9624	5	2386	7	6
55	4297	6	9,742.2609	5	1688	8	5
56	6583	5	5594	3	0990	8	4
57	8868	3	8577	2	0291	9	3
58	9,685.1151	1	9,743.1559	1	9,941.9592	9	2
59	3432	0	4540	0	8893	9	1
M	Co. Sine.	Diff.	Ar. Co. Tan	Diff.	Sine.	Diff.	M

61 Degrees.

Logarithms of Sines and Tangents.

123

29 Degrees

M	Sine.	Diff.	Tangent.	Diff.	Co. Sine.	Diff.	M
0	9,685.5712	227.9	9,743.7520	297.9	9,941.8193	70.0	60
1	7991		9,744.0499	7	7492	1	59
2	9,686.0267	5	3476	7	6791	1	58
3	2542	4	6453	5	6090	1	57
4	4816	2	9428	5	5388	2	56
5	7088	1	9,745.2403	3	4685	3	55
6	9359	226.9	5376	3	3982	3	54
7	9,687.1628	7	8349	1	3279	3	53
8	3095	6	9,746.1320	0	2575	4	52
9	6161	4	4290	296.9	1871	4	51
10	8425	3	7259	8	1166	5	50
11	9,688.0688	1	9,747.0227	7	0461	5	49
12	2949	0	3194	6	9,940.9755	6	48
13	5209	225.8	6160	5	9048	7	47
14	7467	6	9125	4	8342	6	46
15	9723	5	9,748.2089	3	7634	8	45
16	9,689.1978	4	5052	1	6927	7	44
17	4232	2	8013	1	6219	8	43
18	6484	0	9,749.0974	0	5510	9	42
19	8734	224.9	3934	295.8	4801	9	41
20	9,690.0983	8	6892	8	4091	71.0	40
21	3231	5	9850	6	3381	0	39
22	5476	5	9,750.2806	6	2670	1	38
23	7721	3	5762	4	1959	1	37
24	9964	1	8716	3	1248	1	36
25	9,691.2205	0	9,751.1669	3	0535	3	35
26	4445	223.8	4622	1	9,939.9823	2	34
27	6683	6	7573	0	9110	3	33
28	8919	6	9,752.0523	294.9	8396	4	32
29	9,692.1155	3	3472	8	7682	4	31
30	3388	2	6420	8	6968	4	30
31	5620	1	9368	6	6253	5	29
32	7851	222.9	9,753.2314	5	5537	6	28
33	9,693.0080	8	5259	4	4821	6	27
34	2308	6	8203	3	4105	6	26
35	4534	4	9,754.1146	2	3388	7	25
36	6758	3	4088	1	2671	7	24
37	8981	2	7029	0	1953	8	23
38	9,694.1203	0	9969	293.9	1234	9	22
39	3423	221.9	9,755.2908	8	0515	9	21
40	5642	7	5846	7	9,938.9796	9	20
41	7859	5	8783	5	9076	72.0	19
42	9,695.0074	4	9,756.1718	5	8356	0	18
43	2288	3	4653	4	7635	1	17
44	4501	1	7587	3	6914	1	16
45	6712	0	9,757.0520	2	6192	2	15
46	8922	220.8	3452	1	5470	2	14
47	9,696.1130	6	6383	0	4747	3	13
48	3336	5	9313	292.9	4024	3	12
49	5541	4	9,758.2242	8	3300	4	11
50	7745	2	5170	6	2576	4	10
51	9947	1	8096	6	1851	5	9
52	9,697.2148	219.9	9,759.1022	5	1126	5	8
53	4347	8	3947	4	0400	6	7
54	6545	6	6871	3	9,937.9674	6	6
55	8741	5	9794	2	8947	7	5
56	9,698.0936	3	9,760.2716	1	8220	7	4
57	3129	2	5637	0	7492	8	3
58	5321	0	8557	291.9	6764	8	2
59	7511	218.9	9,761.1476	8	6035	9	1
M	Sine.	Diff.	Ar Co Tang	Diff.	Sine.	D. F. M	M

60 Degrees.

30 Degrees.

M	Sine.	Diff.	Tang.	Diff.	Co Sine.	L	M
0	9,698.9700	218.7	9,761.4394	291.7	9,937.5306	72.9	60
1	9,699.1887	6	7311	6	4577	9	59
2	4073	5	9,762.0227	5	3847	73.0	58
3	6258	3	3142	4	3116	1	57
4	8441	1	6056	3	2385	1	56
5	9,700.0622	0	8969	2	1653	2	55
6	2802	217.9	9,763.1881	1	0921	2	54
7	4981	7	4792	0	0189	2	53
8	7158	6	7702	0	9,936.9456	3	52
9	9334	4	9,764.0612	290.8	8722	4	51
10	9,701.1508	3	3520	7	7988	4	50
11	3681	1	6427	7	7254	4	49
12	5852	0	9334	5	6519	5	48
13	8022	216.8	9,765.2239	4	5783	6	47
14	9,702.0190	7	5143	4	5047	6	46
15	2357	6	8047	2	4311	6	45
16	4523	4	9,766.0949	2	3574	7	44
17	6687	2	3851	0	2836	8	43
18	8849	2	6751	0	2098	8	42
19	9,703.1011	215.9	9651	289.9	1360	8	41
20	3170	9	9,767.2550	8	0621	9	40
21	5329	7	5448	6	9,935.9881	74.0	39
22	7486	5	8344	6	9141	0	38
23	9641	4	9,768.1240	5	8401	0	37
24	9,704.1795	2	4135	4	7660	1	36
25	3947	2	7029	3	6918	2	35
26	6099	214.9	9922	2	6177	1	34
27	8248	9	9,769.2814	1	5434	3	33
28	9,705.0397	6	5705	1	4691	3	32
29	2543	6	8596	288.9	3948	3	31
30	4689	4	9,770.1485	8	3204	4	30
31	6833	2	4373	8	2459	5	29
32	8975	1	7261	6	1715	4	28
33	9,706.1116	0	9,771.0147	6	0969	6	27
34	3256	213.8	3033	4	0223	6	26
35	5394	7	5917	4	9,934.9477	6	25
36	7531	6	8801	3	8730	7	24
37	9667	4	9,772.1684	2	7983	7	23
38	9,707.1801	2	4566	1	7235	8	22
39	3933	1	7447	0	6486	9	21
40	6064	0	9,773.0327	287.9	5738	8	20
41	8194	212.9	3206	8	4988	75.0	19
42	9,708.0323	7	6084	7	4238	0	18
43	2450	5	8961	7	3488	0	17
44	4575	4	9,774.1838	5	2737	1	16
45	6699	3	4713	5	1986	1	15
46	8822	1	7588	4	1234	2	14
47	9,709.0943	0	9,775.0462	2	0482	2	13
48	3063	211.9	3334	2	9,933.9729	3	12
49	5182	7	6206	1	8976	3	11
50	7299	6	9077	0	8222	4	10
51	9415	4	9,776.1947	286.9	7467	5	9
52	9,710.1529	3	4816	9	6713	4	8
53	3642	1	7685	7	5957	6	7
54	5753	0	9,777.0552	6	5201	6	6
55	7863	210.9	3418	6	4445	6	5
56	9972	8	6284	5	3688	7	4
57	9,711.2080	6	9149	3	2931	7	3
58	4186	4	9,778.2012	3	2173	8	2
59	6290	3	4875	2	1415	8	1
M	Sine	Diff.	Ar Co Tang.	Diff.	Sine.	Diff.	M

59 Degrees

Logarithms of Sines and Tangents.

125

31 Degrees.

M	Sine.	Diff.	Tangent.	Diff.	Co Sine.	Diff.
0	9,711.8393	210.2	9,778.7737	286.2	9,933.0656	75.960
1	9,712.0495		9,779.0599	0	9,932.9897	959
2	2596	209.9	3459	285.9	9137	76.058
3	4695	7	6318	9	8376	157
4	6792	7	9177	7	7616	056
5	8889	4	9,780.2034	7	6854	255
6	9,713.0983	4	4891	6	6092	254
7	3077	2	7747	5	5330	253
8	5169	1	9,781.0602	4	4567	352
9	7260	208.9	3456	3	3804	351
10	9349	8	6309	3	3040	450
11	9,714.1437	7	9162	1	2276	449
12	3524	5	9,782.2013	1	1511	548
13	5609	4	4864	284.9	0746	547
14	7693	3	7713	9	9,931.9980	646
15	9776	1	9,783.0562	8	9213	745
16	9,715.1857	0	3410	8	8447	644
17	3937	207.8	6258	6	7679	843
18	6015	7	9104	5	6911	842
19	8092	6	9,784.1949	5	6143	841
20	9,716.0108	5	4794	4	5374	940
21	2243	3	7638	3	4605	939
22	4316	1	9,785.0481	2	3835	77.038
23	6387	1	3323	1	3065	037
24	8458	206.8	6164	0	2294	136
25	9,717.0526	8	9004	0	1522	235
26	2594	6	9,786.1844	283.8	0750	234
27	4660	5	4682	8	9,930.9978	233
28	6725	4	7520	7	9205	332
29	8789	2	9,787.0357	6	8432	331
30	9,718.0851	1	3193	5	7658	430
31	2912	205.9	6028	5	6883	529
32	4971	9	8863	3	6109	428
33	7030	6	9,788.1606	3	5333	627
34	9086	6	4529	2	4557	626
35	9,719.1142	4	7361	1	3781	625
36	3196	3	9,789.0192	1	3004	724
37	5249	1	3023	282.9	2226	823
38	7300	0	5852	9	1448	822
39	9350	204.9	8681	7	0670	821
40	9,720.1399	8	9,790.1508	7	9,929.9891	920
41	3447	6	4335	6	9112	919
42	5493	5	7161	6	8332	78.018
43	7538	3	9987	4	7551	117
44	9581	2	9,791.2811	4	6770	116
45	9,721.1623	1	5635	3	5989	115
46	3664	0	8453	2	5207	214
47	5704	203.8	9,792.1200	1	4424	313
48	7742	7	4101	0	3641	312
49	9779	5	6921	0	2857	411
50	9,722.1814	4	9741	281.9	2073	410
51	3848	3	9,793.2560	8	1289	409
52	5881	2	5378	7	0504	508
53	7913	0	8195	6	9,928.9718	607
54	9943	202	9,794.1011	6	8932	606
55	9,723.1972	8	3827	4	8145	705
56	4000	6	6641	4	7358	704
57	6026	5	9455	3	6571	703
58	8051	4	9,795.2268	3	5783	802
59	9,724.0075	2	5081	1	4994	901

M	Co Sine.	Diff.	ArCo Tang.	Diff.	Sine.	Diff.
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58 Degrees.

32 Degrees.

M	Sine.	Diff.	Tangent.	Diff.	Co Sine.	Diff.	M
0	9,724.2097	202.1	9,795.7892	281.1	9,928.4205	78.9	60
1	4118	0	9,796.0703	0	3415	79.0	59
2	6138	201.8	3513	280.9	2625	0	58
3	8156	8	6322	8	1834	1	57
4	9,725.0174	5	9130	8	1043	1	56
5	2189	5	9,797.1038	7	0251	2	55
6	4204	3	4745	6	9,927.9459	2	54
7	6217	2	7551	5	8666	3	53
8	8229	1	9,798.0356	4	7873	3	52
9	9,726.0240	200.9	3160	4	7079	4	51
10	2249	8	5964	3	6285	4	50
11	4257	7	8767	2	5490	5	49
12	6264	5	9,799.1569	1	4695	5	48
13	8269	4	4370	0	3899	6	47
14	9,727.0273	3	7170	0	3103	6	46
15	2276	2	9970	279.9	2306	7	45
16	4278	0	9,800.2769	8	1509	7	44
17	6278	199.9	5567	8	0711	8	43
18	8277	8	8365	6	9,926.9913	8	42
19	9,728.0275	6	9,801.1161	6	9114	9	41
20	2271	6	3957	5	8314	80.0	40
21	4267	3	6752	4	7514	0	39
22	6260	3	9546	4	6714	0	38
23	8253	1	9,802.2340	3	5913	1	37
24	9,729.0244	0	5133	2	5112	1	36
25	2234	198.9	7925	1	4310	2	35
26	4223	8	9,803.0716	0	3507	3	34
27	6211	6	3506	0	2704	3	33
28	8197	5	6296	278.9	1901	3	32
29	9,730.0182	3	9085	8	1096	5	31
30	2165	3	9,804.1873	8	0292	4	30
31	4148	1	4661	6	9,925.9487	5	29
32	6129	0	7447	6	8681	6	28
33	8109	197.8	9,805.0233	6	7875	6	27
34	9,731.0087	7	3019	4	7069	6	26
35	2064	6	5803	4	6261	8	25
36	4040	5	8587	3	5454	7	24
37	6015	4	9,806.1370	2	4646	8	23
38	7989	2	4152	1	3837	9	22
39	9961	1	6933	1	3028	9	21
40	9,732.1932	0	9714	0	2218	81.0	20
41	3902	196.8	9,807.2494	277.9	1408	0	19
42	5870	7	5273	9	0597	1	18
43	7837	6	8052	7	9,924.9786	1	17
44	9803	5	9,808.0829	7	8974	2	16
45	9,733.1768	3	3606	7	8161	3	15
46	3731	2	6383	5	7349	2	14
47	5693	1	9158	5	6535	4	13
48	7654	0	9,809.1933	4	5721	4	12
49	9614	195.8	4707	3	4907	4	11
50	9,734.1572	7	7480	3	4092	5	10
51	3529	6	9,810.0253	2	3277	5	9
52	5485	5	3025	1	2461	6	8
53	7440	3	5796	0	1644	7	7
54	9393	2	8566	0	0827	7	6
55	9,735.1345	1	9,811.1336	276.9	0010	7	5
56	3296	0	4105	8	9,923.9191	9	4
57	5246	194.9	6873	8	8373	8	3
58	7195	7	9641	7	7554	9	2
59	9142	6	9,812.2408	6	6734	82.0	1
M	Co Sine.	Diff.	Ar.Co.Tan.	Diff.	Sine.	Diff.	M

57 Degrees.

33. Degrees.

M.	Sine.	Diff.	Tang.	Diff.	Co. Sine	Diff.	M
0	9,736.1088	194.4	9,812.5174	276.5	9,923.5914	82.0	60
1	3032	4	7939	5	5093	1	59
2	4976	2	9,813.0704	4	4272	1	58
3	6918	1	3468	3	3450	2	57
4	8859	0	6231	2	2628	2	56
5	9,737.0799	193.8	8993	2	1805	3	55
6	2737	8	9,814.1755	1	0982	3	54
7	4675	6	4516	1	0158	4	53
8	6611	5	7277	275.9	9,922.9334	4	52
9	8546	3	9,815.0036	9	8509	5	51
10	9,738.0479	3	2795	9	7684	5	50
11	2412	1	5554	7	6858	6	49
12	4343	0	8311	7	6032	6	48
13	6273	192.8	9,816.1068	6	5205	7	47
14	8201	8	3824	6	4377	8	46
15	9,739.0129	6	6580	5	3549	8	45
16	2055	5	9335	4	2721	8	44
17	3980	4	9,817.2089	3	1891	83.0	43
18	5904	3	4842	3	1062	82.9	42
19	7827	1	7595	2	0232	83.0	41
20	9748	0	9,818.0347	1	9,921.9401	1	40
21	9,740.1668	191.9	3098	1	8570	1	39
22	3587	8	5849	0	7738	2	38
23	5505	6	8599	274.9	6906	2	37
24	7421	6	9,819.1348	8	6073	3	36
25	9337	4	4096	8	5240	3	35
26	9,741.1251	3	6844	8	4406	4	34
27	3164	1	9592	6	3572	4	33
28	5075	1	9,820.2338	6	2737	5	32
29	6986	190.9	5084	5	1902	5	31
30	8895	8	7829	5	1066	6	30
31	9,742.0803	7	9,821.0574	3	0229	7	29
32	2710	6	3317	3	9,920.9393	6	28
33	4616	4	6060	3	8555	8	27
34	6520	3	8803	2	7717	8	26
35	8423	2	9,822.1545	1	6878	9	25
36	9,743.0325	1	4286	0	6039	9	24
37	2226	0	7026	0	5200	9	23
38	4126	189.8	9766	273.9	4360	84.0	22
39	6024	7	9,823.2505	9	3519	1	21
40	7921	6	5244	7	2678	1	20
41	9817	5	7981	8	1836	2	19
42	9,744.1712	4	9,824.0719	6	0994	2	18
43	3606	2	3455	6	0151	3	17
44	5498	2	6191	5	9,919.9308	3	16
45	7390	0	8926	4	8464	4	15
46	9280	188.9	9,825.1660	4	7619	5	14
47	9,745.1169	7	4394	3	6775	4	13
48	3056	7	7127	3	5929	6	12
49	4943	5	9860	2	5083	6	11
50	6828	4	9,826.2592	1	4237	6	10
51	8712	3	5323	0	3390	7	9
52	9,746.0595	2	8053	0	2542	8	8
53	2477	1	9,827.0783	0	1694	8	7
54	4358	187.9	3513	272.8	0845	9	6
55	6237	8	6241	8	9,918.9996	9	5
56	8115	7	8969	7	9146	85.0	4
57	9992	6	9,828.1696	7	8296	0	3
58	9,747.1868	5	4423	6	7445	1	2
59	3743	4	7149	5	6594	1	1
M	Co Sine	Diff.	ArCo Tang.	Diff.	Sine.	Diff.	M

34 Degrees

	Sine.	Diff.	Tangent.	Diff.	Co. Sine.	Diff.	M
0	9,747.5617	187.2	9,828.9874	272.5	9,918.5742	85.2	60
1	7489		9,829.2599	4	4890	2	59
2	9360		5323	4	4037	3	58
3	9,748.1230	186.9	8047	2	3183	4	57
4	3099		9,830.0769	3	2329	4	56
5	4967		3492	1	1475	4	55
6	6833		6213	1	0620	5	54
7	8698		8934	0	9,917.9764	6	53
8	9,749.0562	3	9,831.1654	0	8908	6	52
9	2425	2	4374	271.9	8051	7	51
10	4287		7093	8	7194	7	50
11	6148	185.9	9811	8	6336	8	49
12	8007		9,832.2529	7	5478	8	48
13	9866		5246	7	4619	9	47
14	9,750.1723	6	7963	6	3760	9	46
15	3579		9,833.0679	5	2900	86	0 45
16	5434		3394	5	2040	0	44
17	7287		6109	4	1179	1	43
18	9140		8823	3	0317	2	42
19	9,751.0991	1	9,834.1536	3	9,916.9455	2	41
20	2842	184.9	4249	2	8593	2	40
21	4691		6961	2	7730	3	39
22	6538		9673	1	6866	4	38
23	8385		9,835.2384	0	6002	4	37
24	9,752.0231	4	5094	0	5137	5	36
25	2075		7804	270.9	4272	5	35
26	3919		9,836.0513	8	3406	6	34
27	5761		3221	8	2539	7	33
28	7602		5929	7	1673	6	32
29	9442	183.8	8636	7	0805	8	31
30	9,753.1280	8	9,837.1343	6	9,915.9937	8	30
31	3118		4049	6	9069	8	29
32	4954		6755	5	8200	9	28
33	6790		9460	4	7330	87.0	27
34	8624		9,838.2164	3	6460	0	26
35	9,754.0457	1	4867	4	5589	1	25
36	2288		7571	2	4718	1	24
37	4119		9,839.0273	2	3846	2	23
38	5949	182.8	2975	1	2974	2	22
39	7777		5676	1	2101	3	21
40	9604		8377	0	1228	3	20
41	9,755.1431	5	9,840.1077	269.9	0354	4	19
42	3256		3776		9,914.9479	5	18
43	5080		6475	9	8604	5	17
44	6902		9174	7	7729	5	16
45	8724		9,841.1871	8	6852	7	15
46	9,756.0544	0	4569	6	5976	6	14
47	2364	181.8	7265	6	5099	7	13
48	4182		9961	6	4221	8	12
49	5999		9,842.2657	4	3342	9	11
50	7815		5351	5	2464	8	10
51	9630		8046	3	1584	88.0	9
52	9,757.1444	2	9,843.0739	3	0704	0	8
53	3256		3432	3	9,913.9824	0	7
54	5068		6125	2	8943	1	6
55	6878	180.9	8817	1	8061	2	5
56	8687		9,844.1508	1	7179	2	4
57	9,758.0495	7	4199	0	6296	3	3
58	2302		6889	0	5413	3	2
59	4108		9579	268.9	4530	3	1
M	Co. Sine.	Diff.	Ar. Co. Tan.	Diff.	Sine.	Diff.	M

55 Degrees.

35 Degrees.

M	Sine.	Diff	Tangent.	Diff	Co Sine.	Diff.	M
0	9,758 5913	180.4	9,845.2268	268.8	9,913.3645	88.5	60
1	7717	2	4956	8	2760	5	59
2	9519	2	7644	8	1875	5	58
3	9,759.1321	0	9,846.0332	6	0989	6	57
4	3121	179.9	3018	7	0102	7	56
5	4920	8	5705	5	9,912.9215	7	55
6	6718	7	8390	5	8238	7	54
7	8515	6	9,847.1075	5	7440	8	53
8	9,760.0311	5	3760	4	6551	9	52
9	2106	3	6444	3	5662	9	51
10	3899	3	9127	3	4772	89.0	50
11	5692	1	9,848.1810	2	3882	0	49
12	7483	1	4492	2	2991	1	48
13	9274	178.9	7174	1	2099	2	47
14	9,761.1063	8	9855	1	1207	2	46
15	2851	7	9,849.2536	0	0315	2	45
16	4638	6	5216	0	9,911 9422	3	44
17	6424	4	7896	267.9	8528	4	43
18	8208	4	9,850.0575	8	7634	4	42
19	9992	3	3253	8	6739	5	41
20	9,762.1775	1	5931	7	5844	5	40
21	3556	1	8608	7	4948	6	39
22	5337	177.9	9,851.1285	6	4051	7	38
23	7116	8	3961	6	3155	6	37
24	8894	7	6637	5	2257	8	36
25	9,763.0671	6	9312	5	1359	8	35
26	2447	5	9,852.1987	4	0460	9	34
27	4222	4	4661	4	9,910.9561	9	33
28	5996	3	7335	3	8661	90.0	32
29	7769	1	9,853.0008	2	7761	0	31
30	9540	1	2680	2	6860	1	30
31	9,764.1311	176.9	5352	1	5959	1	29
32	3080	9	8023	1	5057	2	28
33	4849	7	9,854.0694	1	4155	2	27
34	6616	6	3365	266.9	3251	4	26
35	8382	5	6034	267.0	2348	3	25
36	9,765.0147	4	8704	266.8	1444	4	24
37	1911	3	9,855.1372	9	0539	5	23
38	3674	2	4041	7	9,909.9634	5	22
39	5436	1	6708	8	8728	6	21
40	7197	0	9376	6	7821	7	20
41	8957	175.8	9,856.2042	6	6915	6	19
42	9,766.0715	8	4708	6	6007	8	18
43	2473	6	7374	5	5099	8	17
44	4229	6	9,857.0039	5	4190	9	16
45	5985	4	2704	4	3281	9	15
46	7739	3	5368	3	2371	91.0	14
47	9492	2	8031	3	1461	0	13
48	9,767.1244	2	9,858.0694	3	0550	1	12
49	2996	0	3357	2	9,908.9639	1	11
50	4746	174.8	6019	1	8727	2	10
51	6494	8	8680	1	7814	3	9
52	8242	7	9,859.1341	1	6901	3	8
53	9989	6	4002	265.9	5988	3	7
54	9,768.1735	5	6661	266.0	5073	5	6
55	3480	3	9321	265.9	4159	4	5
56	5223	3	9,860.1980	8	3243	6	4
57	6966	1	4638	8	2327	6	3
58	8707	1	7296	8	1411	6	2
59	9,769 0448	173.9	9954	6	0494	7	1
M	Co Sine.	Diff.	Ar Co Tang.	Diff.	Sine.	Diff.	M

54 Degrees.

R

36 Degrees.

M	Sine.	Diff.	Tangent	Diff.	Co Sine.	Diff.	M
0	9,769.2187	173.8	9,861.2610	265.7	9,907.9576	91.8	60
1	3925	7	5267	6	8658	8	59
2	5662	6	7923	5	7740	8	58
3	7398	6	9,862.0578	5	6820	92.0	57
4	9134	4	3233	4	5901	91.9	56
5	9,770.0868	3	5887	4	4980	92.1	55
6	2601	1	8541	4	4059	1	54
7	4332	1	9,863.1195	3	3138	1	53
8	6063	0	3848	2	2216	2	52
9	7793	172.9	6500	2	1293	3	51
10	9522	7	9152	1	0370	3	50
11	9,771.1249	7	9,864.1803	1	9,906.9446	4	49
12	2976	6	4454	1	8522	4	48
13	4702	4	7105	0	7597	5	47
14	6426	4	9755	264.9	6671	6	46
15	8150	2	9,865.2404	9	5745	6	45
16	9872	1	5053	9	4819	6	44
17	9,772.1593	1	7702	8	3892	7	43
18	3314	171.9	9,866.0350	7	2964	8	42
19	5033	8	2997	7	2036	8	41
20	6751	7	5644	7	1107	9	40
21	8468	7	8291	6	0177	93.0	39
22	9,773.0185	5	9,867.0937	6	9,905.9247	0	38
23	1900	4	3583	5	8317	0	37
24	3614	3	6228	5	7386	1	36
25	5327	2	8873	4	6454	2	35
26	7039	0	9,868.1517	3	5522	2	34
27	8749	0	4160	4	4589	3	33
28	9,774.0459	170.9	6804	2	3656	3	32
29	2168	8	9446	3	2722	4	31
30	3876	7	9,869.2089	2	1787	5	30
31	5583	5	4731	1	0852	5	29
32	7288	5	7372	1	9,904.9916	6	28
33	8993	4	9,870.0013	0	8980	6	27
34	9,775.0697	2	2653	0	8043	7	26
35	2399	2	5293	0	7106	7	25
36	4101	0	7933	263.9	6168	8	24
37	5801	0	9,871.0572	8	5230	8	23
38	7501	169.8	3210	8	4291	9	22
39	9199	8	5848	8	3351	94.0	21
40	9,776.0897	6	8486	7	2411	0	20
41	2593	6	9,872.1123	7	1470	1	19
42	4289	4	3760	6	0529	1	18
43	5983	3	6396	6	9,903.9587	2	17
44	7676	3	9032	6	8644	3	16
45	9369	1	9,873.1668	4	7701	3	15
46	9,777.1060	0	4302	5	6557	4	14
47	2750	168.9	6937	4	5813	4	13
48	4439	9	9571	3	4868	5	12
49	6128	7	9,874.2204	4	3923	5	11
50	7815	6	4838	2	2977	6	10
51	9501	5	7470	2	2031	6	9
52	9,778.1186	4	9,875.0102	2	1084	7	8
53	2870	3	2734	1	0136	8	7
54	4553	2	5365	1	9,902.9188	8	6
55	6235	1	7996	1	8239	9	5
56	7916	0	9,876.0627	0	7289	95.0	4
57	9596	167.9	3257	262.9	6339	0	3
58	9,779.1275	8	5886	9	5389	0	2
59	2953	7	8515	9	4438	1	1
M	Co Sine.	Diff.	Ar. Co. Tan.	Diff.	Sine.	Diff.	M

53 Degrees.

Logarithms of Sines and Tangents.

131

37 Degrees

M	Sine.	Diff.	Tangent.	Diff.	Co Sine.	Diff.	M
0	9,779.4630	167.6	9,877.1144	262.8	9,902.3486	95.2	60
1	6306	5	3772	8	2534	2	59
2	7981	4	6400	7	1581	3	58
3	9655	3	9027	7	0628	3	57
4	9,780.1328	2	9,878.1654	7	9,901.9674	4	56
5	3000	1	4281	6	8719	5	55
6	4671	0	6907	6	7764	5	54
7	6341	165.9	9533	5	6808	6	53
8	8010	7	9,879.2158	4	5852	6	52
9	9677	7	4782	5	4895	7	51
10	9,781.1344	6	7407	4	3938	7	50
11	3010	5	9,880.0031	3	2980	8	49
12	4675	4	2654	3	2021	9	48
13	6339	3	5277	3	1062	9	47
14	8002	2	7900	2	0102	96.0	46
15	9664	0	9,881.0522	2	9,900.9142	0	45
16	9,782.1324	0	3144	1	8181	1	44
17	2984	165.9	5765	1	7219	2	43
18	4643	8	8386	1	6257	2	42
19	6301	7	9,882.1007	0	5294	3	41
20	7958	6	3627	261.9	4331	3	40
21	9614	4	6246	262.0	3367	4	39
22	9,783.1268	4	8866	261.8	2403	4	38
23	2922	3	9,883.1484	9	1438	5	37
24	4575	2	4103	8	0472	6	36
25	6227	1	6721	7	9,899.9506	6	35
26	7878	0	9338	8	8539	7	34
27	9528	164.9	9,884.1956	6	7572	7	33
28	9,784.1177	7	4572	7	6604	8	32
29	2824	7	7189	6	5636	8	31
30	4471	6	9805	5	4667	9	30
31	6117	5	9,885.2420	5	3697	97.0	29
32	7762	4	5035	5	2727	0	28
33	9406	3	7650	4	1756	1	27
34	9,785.1049	2	9,886.0264	4	0784	2	26
35	2691	1	2878	4	9,898.9812	2	25
36	4332	0	5492	3	8840	2	24
37	5972	163.9	8105	3	7867	3	23
38	7611	8	9,887.0718	2	6893	4	22
39	9249	7	3330	2	5919	4	21
40	9,786.0886	6	5942	2	4944	5	20
41	2522	5	8554	1	3968	6	19
42	4157	4	9,888.1165	0	2992	6	18
43	5791	3	3775	1	2015	7	17
44	7424	2	6386	0	1038	7	16
45	9056	1	8996	260.9	0060	8	15
46	9,787.0687	0	9,889.1605	9	9,897.9082	8	14
47	2317	162.9	4214	9	8103	9	13
48	3946	8	6823	9	7123	98.0	12
49	5574	8	9432	8	6143	0	11
50	7202	6	9,890.2040	7	5162	1	10
51	8828	5	4647	7	4181	1	9
52	9,788.0453	4	7254	7	3199	2	8
53	2077	4	9861	7	2216	3	7
54	3701	2	9,891.2468	6	1233	3	6
55	5323	1	5074	5	0249	4	5
56	6944	1	7679	6	9,896.9265	4	4
57	8565	161.9	9,892.0285	5	8280	5	3
58	9,789.0184	8	2890	4	7294	6	2
59	1802	8	5494	4	6308	6	1
M	Co Sine	Diff.	Ar Co Tang.	Diff.	Sine.	Diff.	M

52 Degrees.

38 Degrees.

M	Sine.	Diff.	Tang.	Diff.	Co Sine.	Diff.	M
0	9,789.3420	161.6	9,892.8098	260.4	9,896.5321	98.7	60
1	5036	6	9,893.0702	4	4334	7	59
2	6652	4	3306	3	3346	8	58
3	8266	4	5909	2	2358	8	57
4	9880	3	8511	3	1369	9	56
5	9,790.1493	1	9,894.1114	1	0379	99.0	55
6	3104	1	3715	2	9,895.9389	0	54
7	4715	0	6317	1	8398	1	53
8	6325	160.8	8918	1	7406	2	52
9	7933	8	9,895.1519	0	6414	2	51
10	9541	7	4119	0	5422	2	50
11	9,791.1148	6	6719	0	4429	3	49
12	2754	5	9319	259.9	3435	4	48
13	4359	4	9,896.1918	9	2440	5	47
14	5963	3	4517	9	1445	5	46
15	7566	2	7116	8	0450	5	45
16	9168	1	9714	8	9,894.9453	7	44
17	9,792.0769	0	9,897.2312	8	8457	6	43
18	2369	159.9	4910	7	7459	8	42
19	3968	8	7507	7	6461	8	41
20	5566	7	9,898.0104	6	5463	8	40
21	7163	7	2700	6	4463	100.0	39
22	8760	5	5296	6	3464	99.9	38
23	9,793.0355	4	7892	5	2463	100.1	37
24	1949	4	9,899.0487	5	1462	1	36
25	3543	2	3082	5	0461	1	35
26	5135	2	5677	4	9,893.9458	3	34
27	6727	0	8271	4	8456	2	33
28	8317	0	9,900.0865	4	7452	4	32
29	9907	158.9	3459	3	6448	4	31
30	9,794.1496	7	6052	3	5444	4	30
31	3083	7	8645	2	4439	5	29
32	4670	6	9,901.1237	3	3433	6	28
33	6256	5	3830	2	2426	7	27
34	7841	4	6422	1	1419	7	26
35	9425	3	9013	1	0412	7	25
36	9,795.1008	2	9,902.1604	1	9,892.9404	8	24
37	2590	1	4195	1	8395	9	23
38	4171	0	6786	0	7385	101.0	22
39	5751	157.9	9376	0	6375	0	21
40	7330	9	9,903.1966	258.9	5365	0	20
41	8909	7	4555	9	4354	1	19
42	9,796.0486	6	7144	9	3342	2	18
43	2062	6	9733	8	2329	3	17
44	3638	4	9,904.2321	9	1316	3	16
45	5212	4	4910	7	0303	3	15
46	6786	3	7497	8	9,891.9289	4	14
47	8359	1	9,905.0085	7	8274	5	13
48	9930	1	2672	7	7258	6	12
49	9,797.1501	0	5259	6	6242	6	11
50	3071	156.9	7845	6	5226	6	10
51	4640	8	9,906.0431	6	4208	8	9
52	6208	7	3017	6	3191	7	8
53	7775	6	5603	5	2172	9	7
54	9341	5	8188	5	1153	9	6
55	9,798.0906	4	9,907.0773	4	0133	102.0	5
56	2470	4	3357	4	9,890.9113	0	4
57	4034	2	5941	4	8092	1	3
58	5596	2	8525	4	7071	1	2
59	7158	0	9,908.1109	3	6049	2	1
M	Co Sine.	Diff.	Ar Co Tang.	Diff.	Sine	Diff.	M

51 Degrees.

39 Degrees

M	Sine.	Diff.	Tang	Diff.	Co Sine.	Diff.	M
0	9,798 8718	156.0	9,908.3692	258.3	9,890.5026	102.3	60
1	9,799.0278	155.8	6275	3	4003	3	59
2	1836	8	8858	2	2979	4	58
3	3394	7	9,909 1440	2	1954	5	57
4	4651	6	4022	1	0929	5	56
5	6507	5	6603	2	9,889.9903	6	55
6	8062	4	9185	1	8877	6	54
7	9618	3	9,910.1766	1	7850	7	53
8	9,800.1169	2	4347	0	6822	8	52
9	272	1	6927	0	5794	8	51
10	4272	1	9507	0	4765	9	50
11	5823	154.9	9,911.2087	257.9	3736	9	49
12	7372	9	4666	9	2706	103.0	48
13	8921	7	7245	9	1675	1	47
14	9,801.0468	7	9824	9	0644	1	46
15	2015	6	9,912.2403	8	9,888.9612	2	45
16	3561	5	4981	8	8580	2	44
17	5106	3	7559	8	7547	3	43
18	6649	3	9,913 0137	7	6513	4	42
19	8192	3	2714	7	5479	4	41
20	9735	1	5291	7	4444	5	40
21	9,802.1276	0	7868	6	3408	6	39
22	2816	153.9	9,914 0444	6	2372	6	38
23	4355	9	3020	6	1335	7	37
24	5894	7	5596	5	0298	7	36
25	7431	7	8171	6	9,887 9260	8	35
26	8968	6	9,915.0747	5	8221	9	34
27	9,803.0504	4	3322	4	7182	9	33
28	2038	4	5896	5	6142	104.0	32
29	3572	3	8471	4	5102	0	31
30	5105	2	9,916.1045	3	4061	1	30
31	6637	1	3618	4	3019	2	29
32	8168	1	6192	3	1977	2	28
33	9699	152.9	8765	3	0934	3	27
34	9,804.1228	9	9,917.1338	3	9,886.9890	4	26
35	2757	7	3911	2	8846	4	25
36	4284	7	6483	2	7801	5	24
37	5811	5	9055	2	6756	5	23
38	7336	5	9,918.1627	1	5710	6	22
39	8861	4	4198	1	4663	7	21
40	9,805.0385	3	6769	1	3616	7	20
41	1908	2	9340	1	2568	8	19
42	3430	1	9,919.1911	0	1519	9	18
43	4951	1	4481	0	0470	9	17
44	6472	151.9	7051	0	9,885.9420	105.0	16
45	7991	9	9621	0	8370	0	15
46	9510	7	9,920 2191	256.9	7319	1	14
47	9,806.1027	7	4760	9	6267	2	13
48	2544	6	7329	9	5215	2	12
49	4060	5	9898	8	4162	3	11
50	5575	4	9,921.2466	8	3109	3	10
51	7089	3	5034	8	2055	4	9
52	8602	2	7602	8	1000	5	8
53	9,807.0114	2	9,922.0170	7	9,884.9945	5	7
54	1626	0	2737	7	8886	6	6
55	3136	0	5304	7	7832	7	5
56	464	150.8	7871	6	6775	7	4
57	613	8	9,923 0437	7	5717	8	3
58	7662	7	3004	6	4659	8	2
59	9169	5	5570	5	3599	106.0	1
M	Co Sine.	Diff.	Ar Co. an	Diff.	Sine.	Diff.	M

40 Degrees.

M	Sine.	Diff.	Tangent.	Diff.	Co. Sine.	Diff.	M
0	9,808.0675	150.5	9,923.8135	256.6	9,884.2540	105.9	60
1	2180	4	9,924.0701	5	1479	106.1	59
2	3684	4	3266	5	0418	1	58
3	5188	2	5831	5	9,883.9357	1	57
4	6690	2	8396	4	8294	3	56
5	8192	0	9,925.0960	4	7232	2	55
6	9692	0	3524	4	6168	4	54
7	9,809.1192	149.9	6088	4	5104	4	53
8	2691	8	8652	3	4039	5	52
9	4189	7	9,926.1215	3	2974	5	51
10	5686	6	3778	3	1908	6	50
11	7182	6	6341	3	0841	7	49
12	8678	4	8904	2	9,882.9774	7	48
13	9,810.0172	4	9,927.1466	2	8706	8	47
14	1666	3	4028	2	7638	8	46
15	3159	1	6590	2	6568	107.0	45
16	4650	1	9152	1	5499	106.9	44
17	6141	0	9,928.1713	1	4428	107.1	43
18	7631	0	4274	1	3357	1	42
19	9121	148.8	6835	1	2285	2	41
20	9,811.0609	7	9396	0	1213	2	40
21	2096	7	9,929.1956	0	0140	3	39
22	3583	6	4516	0	9,881.9067	3	38
23	5069	5	7076	0	7992	5	37
24	6554	4	9636	255.9	6918	4	36
25	8038	3	9,930.2195	256.0	5842	6	35
26	9521	2	4755	255.9	4766	6	34
27	9,812.1003	1	7314	8	3689	7	33
28	2484	1	9872	9	2612	7	32
29	3965	147.9	9,931.2431	8	1534	8	31
30	5444	9	4989	8	0455	9	30
31	6923	8	7547	8	9,880.9376	9	29
32	8401	7	9,932.0105	7	8296	108.0	28
33	9878	6	2662	8	7215	1	27
34	9,813.1354	5	5220	7	6134	1	26
35	2829	4	7777	7	5052	2	25
36	4303	4	9,933.0334	6	3970	2	24
37	5777	3	2890	6	2887	3	23
38	7250	1	5446	7	1803	4	22
39	8721	1	8003	6	0719	4	21
40	9,814.0192	0	9,934.0559	5	9,879.9634	5	20
41	1662	146.9	3114	6	8548	6	19
42	3131	9	5670	5	7462	6	18
43	4600	7	8225	5	6375	7	17
44	6067	7	9,935.0780	5	5287	8	16
45	7534	5	3335	4	4199	8	15
46	8999	5	5889	5	3110	9	14
47	9,815.0464	4	8444	4	2021	9	13
48	1928	3	9,936.0998	4	0930	109.0	12
49	3391	3	3552	3	9,878.9840	0	11
50	4854	1	6105	4	8748	2	10
51	6315	1	8659	3	7656	2	9
52	7776	145.9	9,937.1212	3	6563	3	8
53	9235	9	3765	3	5470	3	7
54	9,816.0694	8	6318	3	4376	4	6
55	2152	7	8871	2	3281	5	5
56	3609	7	9,938.1423	2	2186	5	4
57	5066	5	3975	2	1090	6	3
58	6521	4	627	2	9,877.9994	6	2
59	7975	4	9079	2	8896	8	1
M	Co Sine.	Diff.	Ar. Co. Tan	Diff.	Sine.	Diff.	M

49 Degrees.

41 Degrees.

M.	Sine.	Diff.	Tang.	Diff.	Co Sine.	Diff.	M.
0	9,816.9429	145.3	9,939.1631	255.1	9,877.7799	109.7	60
1	9,817.0882	2	4182	1	6700	9	59
2	2334	1	6733	1	5601	9	58
3	3785	0	9284	1	4501	110.0	57
4	5235	0	9,940.1835	0	3401	0	56
5	6685	144.8	4385	1	2300	1	55
6	8133	8	6936	0	1198	2	54
7	9581	7	9486	0	0096	2	53
8	9,818.1028	6	9,941.2036	254.9	9,876.8993	3	52
9	2474	5	4585	255.0	7889	4	51
10	3919	5	7135	254.9	6785	4	50
11	5364	3	9684	9	5680	5	49
12	6807	3	9,942.2233	9	4574	6	48
13	8250	2	4782	9	3468	6	47
14	9692	1	7331	8	2361	7	46
15	9,819.1133	0	9879	8	1253	8	45
16	2573	143.9	9,943.2428	8	0145	8	44
17	4012	8	4976	8	9,875.9036	9	43
18	5450	8	7524	8	7927	9	42
19	6888	7	9,944.0072	7	6816	111.1	41
20	8325	6	2619	7	5706	0	40
21	9761	5	5166	7	4594	2	39
22	9,820.1196	4	7714	7	3482	2	38
23	2630	3	9,945.0261	6	2369	3	37
24	4063	3	2807	6	1256	3	36
25	5496	1	5354	6	0142	4	35
26	6927	1	7900	6	9,874.9027	5	34
27	8358	0	9,946.0447	6	7912	5	33
28	9788	142.9	2993	6	6795	7	32
29	9,821.1217	9	5539	5	5679	6	31
30	2646	7	8084	6	4561	8	30
31	4073	7	9,947.0630	5	3443	8	29
32	5500	6	3175	5	2325	8	28
33	6926	5	5720	5	1205	112.0	27
34	8351	4	8265	5	0085	0	26
35	9775	3	9,948.0810	5	9,873.8965	0	25
36	9,822.1198	3	3355	4	7844	1	24
37	2621	1	5899	4	6722	2	23
38	4042	1	8443	4	5599	3	22
39	5463	0	9,949.0987	4	4476	3	21
40	6883	141.9	3531	4	3352	4	20
41	8302	9	6075	4	2227	5	19
42	9721	7	8619	3	1101	5	18
43	9,823.1138	7	9,950.1162	3	9,872.9976	6	17
44	2555	6	3705	3	8849	7	16
45	3971	5	6248	3	7722	7	15
46	5386	4	8791	3	6594	8	14
47	6800	3	9,951.1334	2	5466	8	13
48	8213	3	3876	3	4337	9	12
49	9626	1	6419	2	3207	113.0	11
50	9,824.1037	1	8961	2	2076	1	10
51	2448	0	9,952.1503	2	0945	1	9
52	3858	140.9	4045	2	9,871.9813	2	8
53	5267	9	6587	1	8681	2	7
54	6676	7	9128	2	7548	3	6
55	8083	7	9,953.1670	1	6414	4	5
56	9490	6	4211	1	5279	5	4
57	9,825.0896	5	6752	1	4144	5	3
58	2301	4	9293	1	3008	6	2
59	3705	4	9,954.1834	0	1872	6	1
M.	Co. Sine	Diff.	ArCo Tang.	Diff.	Sine.	Diff.	M.

48 Degrees.

42 Degrees

M	Sine.	Diff.	Tangent	Diff.	Co Sine.	Diff.	M
0	9,825.5109	140.3	9,954.4374	254.1	9,871.0735	113.7	60
1	6512	1	6915	0	9,870.9597	8	59
2	7913	1	9455	0	8458	9	58
3	9314	1	9,955.1995	0	7319	9	57
4	9,826.0715	139.9	4535	0	6179	114.0	56
5	2114	8	7075	0	5039	0	55
6	3512	8	9615	0	3898	1	54
7	4910	7	9,956.2154	0	2756	2	53
8	6307	6	4694	253.9	1613	3	52
9	7703	5	7233	9	0470	3	51
10	9098	5	9772	9	9,869.9326	4	50
11	9,827.0493	4	9,957.2311	9	8182	4	49
12	1887	2	4850	9	7037	5	48
13	3279	2	7389	8	5891	6	47
14	4971	2	9927	8	4744	7	46
15	6063	0	9,958.2465	9	3597	7	45
16	7453	0	5004	8	2449	8	44
17	8843	138.8	7542	8	1301	8	43
18	9,828.0231	8	9,959.0080	8	0152	9	42
19	1619	7	2618	7	9,868.9002	115.0	41
20	3006	7	5155	8	7851	1	40
21	4393	5	7693	7	6700	1	39
22	5778	5	9,960.0230	7	5548	2	38
23	7163	4	2767	8	4396	2	37
24	8547	3	5305	7	3242	4	36
25	9930	2	7842	6	2088	4	35
26	9,829.1312	2	9,961.0378	7	0934	4	34
27	2694	1	2915	7	9,867.9779	5	33
28	4075	137.9	5452	6	8623	6	32
29	5454	9	7988	7	7466	7	31
30	6833	9	9,962.0525	6	6309	7	30
31	8212	7	3061	6	5151	8	29
32	9589	7	5597	6	3992	9	28
33	9,830.0966	6	8133	6	2833	9	27
34	2342	5	9,963.0669	5	1673	116.0	26
35	3717	4	3204	6	9,866.0512	1	25
36	5091	3	5740	5	9351	1	24
37	6464	3	8275	6	8189	2	23
38	7837	2	9,964.0811	5	7026	3	22
39	9206	1	3346	5	5863	3	21
40	9,831.0580	0	5881	5	4699	4	20
41	1950	0	8416	5	3534	5	19
42	3320	136.8	9,965.0951	5	2369	5	18
43	4688	8	3486	4	1203	6	17
44	6056	7	6020	5	0036	7	16
45	7423	6	8555	4	9,865.8868	8	15
46	8789	6	9,966.1089	4	7700	8	14
47	9,832.0155	4	3623	4	6531	9	13
48	1519	4	6157	5	5362	9	12
49	2883	3	8692	3	4192	117.0	11
50	4246	3	9,967.1225	4	3021	1	10
51	5609	1	3759	4	1849	2	9
52	6970	1	6293	4	0677	2	8
53	8331	0	8827	3	9,864.9504	3	7
54	9691	135.9	9,968.1360	3	8331	3	6
55	9,833.1050	8	3893	4	7156	5	5
56	2408	8	6427	3	5981	5	4
57	3766	6	8960	3	4806	5	3
58	5122	6	9,969.1493	3	3629	7	2
59	6478	5	4026	3	2452	7	1
M	Co. Sine.	Diff.	Ar. Co. Tan.	Diff.	Sim.	Diff.	M

47 Degrees.

43 Degrees.

M	Sine.	Diff.	Tangent.	Diff.	Co Sine.	Diff.	M
0	9,833.7833	135.5	9,969.6559	253.2	9,864.1275	117.7	60
1	9188	3	9091	3	0096	9	59
2	9,834.0541	3	9,970.1624	3	9,863.8917	9	58
3	1894	2	4157	2	7737	118.0	57
4	3246	1	6689	2	6557	0	56
5	4597	1	9221	3	5376	1	55
6	5948	134.9	9,971.1754	2	4194	2	54
7	7297	9	4286	2	3011	3	53
8	8646	8	6818	2	1828	3	52
9	9994	7	9350	2	0644	4	51
10	9,835.1341	7	9,972.1882	1	9,862.9460	4	50
11	2688	5	4413	2	8274	6	49
12	4033	5	6945	2	7088	6	48
13	5378	4	9477	1	5902	6	47
14	6722	4	9,973.2008	1	4714	8	46
15	8066	2	4539	2	3526	8	45
16	9408	2	7071	1	2338	8	44
17	9,836.0750	1	9602	1	1148	119.0	43
18	2091	0	9,974.2133	1	9,861.9958	0	42
19	3431	0	4664	1	8767	1	41
20	4771	133.8	7195	1	7576	1	40
21	6109	8	9726	1	6383	3	39
22	7447	7	9,975.2257	0	5190	3	38
23	8784	7	4787	1	3997	3	37
24	9,837.0121	5	7318	1	2803	4	36
25	1456	5	9849	0	1608	5	35
26	2791	4	9,976.2379	0	0412	6	34
27	4125	3	4909	1	9,860.9215	7	33
28	5458	2	7440	0	8018	7	32
29	6790	2	9970	0	6821	7	31
30	8122	1	9,977.2500	0	5622	9	30
31	9453	0	5030	0	4423	9	29
32	9,838.0783	132.9	7560	0	3223	120.0	28
33	2112	9	9,978.0090	0	2022	1	27
34	3441	8	2620	252.9	0821	1	26
35	4769	7	5149	253.0	9,859.9619	2	25
36	6096	6	7679	0	8416	3	24
37	7422	5	9,979.0209	252.9	7213	3	23
38	8747	5	2738	253.0	6009	4	22
39	9,839.0072	4	5268	252.9	4804	5	21
40	1396	3	7797	9	3599	5	20
41	2719	2	9,980.0326	253.0	2393	6	19
42	4041	2	2856	252.9	1186	7	18
43	5363	1	5385	9	9,858.9978	8	17
44	6684	0	7914	9	8770	8	16
45	8004	131.9	9,981.0443	9	7561	9	15
46	9323	9	2972	9	6351	121.0	14
47	9,840.0642	7	5501	9	5141	0	13
48	1959	7	8030	9	3929	2	12
49	3276	7	9,982.0559	8	2718	1	11
50	4593	5	3087	9	1505	3	10
51	5908	5	5616	9	0292	3	9
52	7223	4	8145	8	9,857.9078	4	8
53	8537	3	9,983.0673	9	7863	5	7
54	9850	2	3202	8	6648	5	6
55	9,841.1162	2	5730	9	5432	6	5
56	2474	1	8259	8	4215	7	4
57	3785	0	9,984.0787	8	2998	7	3
58	5095	130.9	3315	9	1779	9	2
59	6404	9	5844	8	0561	8	1
M	Co Sine.	Diff.	Ar CoTang.	Diff.	Sine	Diff.	M

44 Degrees.

M	Sine.	Diff	Tangent.	Diff	Co Sine.	Diff.	M
0	9,841.7713	130.8	9,984.8372	252.8	9,856.9341	122.0	60
1	9021	7	9,985.0900	8	8121	0	59
2	9,842.0328	6	3428	8	6900	1	58
3	1634	5	5956	8	5678	2	57
4	2939	5	8484	7	4455	3	56
5	4244	4	9,986.1012	8	3232	3	55
6	5548	3	3540	8	2008	4	54
7	6851	3	6068	8	0784	4	53
8	8154	2	8596	7	9,855.9558	6	52
9	9456	1	9,987.1123	8	8332	6	51
10	9,843.0757	0	3651	8	7106	6	50
11	2057	129.9	6179	7	5878	8	49
12	3356	9	8706	8	4650	8	48
13	4655	8	9,988.1234	7	3421	9	47
14	5953	7	3761	8	2192	9	46
15	7250	7	6289	7	0961	123.1	45
16	8547	5	8816	8	9,854.9730	1	44
17	9842	5	9,989.1344	7	8499	1	43
18	9,844.1137	5	3871	8	7266	3	42
19	2432	3	6399	7	6033	3	41
20	3725	3	8926	7	4799	4	40
21	5018	2	9,990.1453	8	3564	5	39
22	6310	1	3981	7	2329	5	38
23	7601	0	6508	7	1093	6	37
24	8891	0	9035	7	9,853.9856	7	36
25	9,845.0181	128.9	9,991.1562	7	8619	7	35
26	1470	8	4089	7	7381	8	34
27	2758	7	6616	7	6142	9	33
28	4045	7	9143	7	4902	124.0	32
29	5332	6	9,992.1670	7	3662	0	31
30	6618	5	4197	7	2421	1	30
31	7903	5	6724	7	1179	2	29
32	9188	3	9251	7	9,852.9936	3	28
33	9,846.0471	3	9,993.1778	7	8693	3	27
34	1754	2	4305	7	7449	4	26
35	3036	2	6832	7	6204	5	25
36	4318	1	9359	7	4959	5	24
37	5599	0	9,994.1886	7	3713	6	23
38	6879	127.9	4413	7	2466	7	22
39	8158	8	6940	6	1218	8	21
40	9436	8	9466	7	9,851.9970	8	20
41	9,847.0714	7	9,995.1993	7	8721	9	19
42	1991	6	4520	7	7471	125.0	18
43	3267	6	7047	6	6220	1	17
44	4543	4	9573	7	4969	1	16
45	5817	4	9,996.2100	7	3717	2	15
46	7091	4	4627	7	2465	2	14
47	8365	2	7154	6	1211	4	13
48	9637	2	9680	7	9,850.9957	4	12
49	9,848.0909	1	9,997.2207	7	8702	5	11
50	2180	0	4734	6	7446	6	10
51	3450	0	7260	7	6190	6	9
52	4720	126.9	9787	7	4933	7	8
53	5989	8	9,998.2314	6	3675	8	7
54	7257	7	4840	7	2417	8	6
55	8524	7	7367	6	1157	126.0	5
56	9791	6	9893	7	9,849.9897	0	4
57	9,849.1057	5	9,999.2420	7	8637	0	3
58	2322	4	4947	6	7375	2	2
59	3586	4	7473	7	6113	2	1
60	4850		10,0000000		4850	3	0

45 Degrees

T A B L E XXXV. 139

Auxiliary to Tab. 34.

Deg	Sec.	Deg	Sec.	Deg	Sec.	Deg	Sec.
0		0		1		1	
1	60	31	1860	1	3660	31	5460
2	120	32	1920	2	3720	32	5520
3	180	33	1980	3	3780	33	5580
4	240	34	2040	4	3840	34	5640
5	300	35	2100	5	3900	35	5700
6	360	36	2160	6	3960	36	5760
7	420	37	2220	7	4020	37	5820
8	480	38	2280	8	4080	38	5880
9	540	39	2340	9	4140	39	5940
10	600	40	2400	10	4200	40	6000
11	660	41	2460	11	4260	41	6060
12	720	42	2520	12	4320	42	6120
13	780	43	2580	13	4380	43	6180
14	840	44	2640	14	4440	44	6240
15	900	45	2700	15	4500	45	6300
16	960	46	2760	16	4560	46	6360
17	1020	47	2820	17	4620	47	6420
18	1080	48	2880	18	4680	48	6480
19	1140	49	2940	19	4740	49	6540
20	1200	50	3000	20	4800	50	6600
21	1260	51	3060	21	4860	51	6660
22	1320	52	3120	22	4920	52	6720
23	1380	53	3180	23	4980	53	6780
24	1440	54	3240	24	5040	54	6840
25	1500	55	3300	25	5100	55	6900
26	1560	56	3360	26	5160	56	6960
27	1620	57	3420	27	5220	57	7020
28	1680	58	3480	28	5280	58	7080
29	1740	59	3540	29	5340	59	7140
30	1800	60	3600	30	5400	60	7200
Deg	Sec.	Deg	Sec.	Deg	Sec.	Deg	Sec.
0		0		1		1	

Minutes.

Explanation of Tables 32 and 33.

IN Tab. 32. (from Page 58 to 61.) Brigg's Log. of any Number, not exceeding 3 Places of Figures, will be found on the right Hand of those Figures.

In the remaining Part of that Table ; the three left Hand Figures (in the Column mark'd N) and the fourth, at Top (of one of the other Columns) will give the Logarithm of any Number of four Places of Figures ; observing to prefix those Figures which in the Column signed (o) stand before the Period (.), to the Figures of the other Columns. If there be no such Figures on the Line, use those next above the same ; observing when a Cypher begins any of the nine right hand Columns, to use, for the Remainder of that Line, those next below.

For Example, The Logarithm of the Number 7668 is 3,8846821 (see Page 73.) viz. (3) the proper Index ; (884.) the Figures which on the Line with [766] stand before (.) in the Column mark'd (o) ; and (6821) those on the same Line in the Column mark'd (8) : In like manner the Logarithms of 7673 and 7674 are 3,8849652 and 3,8850218.

In *Tab. 33*: The Number corresponding to any *Briggean* Logarithm, not exceeding four Places of Figures, will be found in the same manner as the Logarithms are found in the latter Part of *Tab. 32*.

Thus, The Number corresponding to the Logarithm 3,6547 is 4515,439; (*see Page 87.*) viz, (45.) the Figures which on the Line with (654) stand before (.) in the Column mark'd (0); and (15439) those on the same Line in the Column mark'd (7): which Figures are separated by a Comma, in the above manner, because the Index of the given Logarithm, being 3, shews that the corresponding Number has four integral Places. In like manner the Numbers to the Logarithms 3,6532 and 3,6533 are 4499,870 and 4500,907.

The Logarithms to Numbers, and the Numbers to Logarithms, consisting of more than *four* and less than *eight* Places of Figures, may be found by either Table; as follows,

Put a = any Number; A = it's Log.; N = the next greater tabular Number, n = the next lesser; L = the Log. of N ; and l = the Log. of n . Then,

$$\begin{aligned} \text{As } N - n : L - l :: a - n : A - l \text{ And } l + \overline{A - l} = A. \\ \text{' } L - l : N - n :: A - l : a - n \quad n + \overline{a - n} = a. \end{aligned}$$

Now because $N - n$ is 1000 in *Tab. 32*, Therefore $A - l$ will be found therefrom by Multiplication, and $a - n$ by Division.

On the contrary, since $L - l$ is 1000 in *Tab. 33*, $A - l$ will be found from it by Division, and $a - n$ by Multiplication.

But the Answers will be most easily obtained, by that Table wherein the Tabular Differences are least; now in *Tab. 32*. the Differences of the Logarithms of those Numbers, whose left Hand Figures exceed 4343, consist of but 3 Places of Figures; and in *Tab. 33*. the Differences of those Numbers, whose left Hand Figures are less than 4343, have likewise but three Places; for which Reason, those Differences, only, are inserted in either Table, in the Column mark'd *Diff.* viz. in the last ten Pages of the former, and in the first eleven Pages of the latter.

Consequentially, If the left Hand Figures of the Number, whose Logarithm is sought, exceed 4343, use the 32*d.* Table, otherwise the 33*d.* And on the contrary, if the left Hand Figures of the Logarithm, whose Number is required, are less than 6378, use the 32*d.* Table; otherwise the 33*d.*

As Table 38. is inserted to shorten the Operations above-mentioned, the Reader is referr'd to the Use thereof for Examples.

Expla-

Explanation of Tables 34 and 35.

THE Logarithms of the Sines of every Minute of the Quadrant, and of the Tangents of every Minute to 45 Degrees are contained in Table 34.

In Arcs greater than 2 Degrees, the Column mark'd *Diff.* contains the Differences between the adjoining left Hand Logarithms, and the next greater in the same Column.

But in Arcs less than 2 Deg. the Col. mark'd $\left. \begin{array}{l} \text{Sub.} \\ \text{Add.} \end{array} \right\}$ contains the Difference between the Logarithms of the Lengths of the Arcs, and the Logarithms of the $\left. \begin{array}{l} \text{Sines.} \\ \text{Tangents.} \end{array} \right\}$ of those Arcs; the Column mark'd *Diff.* being the Differences of the last named.

The Seconds, contained in any Number of Minutes less than 2 Degrees, are inserted, to the right Hand of that Number of Minutes, in Table 35.

The Cases, in which the manner of using *Tab. 34.* is different from others of the same kind are as follow.

C A S E I.

To find the Logarithm Sine or Tangent of an Arc, consisting of Minutes and Seconds, less than 2 Degrees.

Examp. 1. What is the Log. Sine of $1^{\circ} 11' 37''$?

To (4260) the Seconds in $1^{\circ} 11'$ (found in *Tab. 35.*) add (37) the given Seconds, the Sum of which (4297) is the Seconds in $1^{\circ} 11' 37''$:

To the Log. of (4297) that N^o of Sec. (*Tab. 32.*) 3,6331654
Add the Log. of the Length of the Arc of 1 Sec. 4,6855749

From the Sum (being the Log. of the Length of the Arc) $\left. \begin{array}{l} \\ \end{array} \right\} 8,3187403$

Take the Number given by $1^{\circ} 11'$ (*Tab. 34.*) $\left. \begin{array}{l} \\ \end{array} \right\}$
in the Col. mark'd (*Sub.*) See Page 95. $\left. \begin{array}{l} \\ \end{array} \right\} 308$

And $\frac{37}{60}$ of 9 the annexed Difference, $\left. \begin{array}{l} \\ \end{array} \right\} 5$

Then will the Remainder be the Log. requir'd, 8,3187090

Examp. 2. What is the Log. Tangent of $1^{\circ} 11' 37''$?

To the Log. of the Length of the given Arc $\left. \begin{array}{l} \\ \end{array} \right\} 8,3187403$
(found as above) $\left. \begin{array}{l} \\ \end{array} \right\}$

Add the Number given by $1^{\circ} 11''$ (*Tab. 34.*) $\left. \begin{array}{l} \\ \end{array} \right\}$
in the Column mark'd (*Add.*) See Pa. 95. $\left. \begin{array}{l} \\ \end{array} \right\} 618$

And $\frac{37}{60}$ of 17 the annexed Difference $\left. \begin{array}{l} \\ \end{array} \right\} 9$

The Sum will be the Log. required, $\left. \begin{array}{l} \\ \end{array} \right\} 8,3188030$

C A S E

C A S E II.

The Logarithm of a Sine or Tangent less than 2 Degrees; being given, to find the Arc.

Examp. 1. Of what Arc is 8,3187089 the Log. Sine?

To the given Log.	8,3187089
Add the Number given by (8,3210269) the nearest Tabular Log. Sine, in the Column mark'd (<i>Sub.</i>) See Pag. 95.	317

From the Sum	8,3187406
Take the Log. of the Length of the Arc of 1 Sec.	4,6855749

Find in <i>Tab. 32.</i> the nearest Logarithm (3,6331654) to the Remainder	3,6331657
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Then will (4297) the Number corresponding thereto, be the Seconds contained in ($1^{\circ} 11' 37''$) the required Arc.

Examp. 2. Of what Arc is 8,3188029 the Log. Tangent?

From the given Log.	8,3188029
Take the Number given, by (8,3211221) the nearest Tabular Log. Tangent, in the Column mark'd (<i>Add.</i>)	635
And the Log. of the Length of the Arc of 1 Sec.	4,6855749

Find in <i>Tab. 32.</i> the nearest Log. (3,6331654) to the Remainder	3,6331645
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Then will (4297) the Number corresponding thereto be the Seconds contained in the required Arc ($1^{\circ} 11' 37''.)$

C A S E III.

To find the Log. Tangent of an Arc greater than 45 Degrees.

Find, by the Table, the Log. Co. Tangent; Then shall the Arithmetical Complement thereof be the Log. Tangent required.

Example. What is the Log. Tangent of $68^{\circ} 56'$?

The Log. Tangent of $21^{\circ} 4'$ is per Table — 9,5856859; Which deducted from 20,0000000, leaves 10,4143141, the Log. Tangent of $68^{\circ} 56'$.

C A S E IV.

To find the Log. Secant of any Arc.

Find, by the Table, the Log. Co. Sine; Then shall the Arithmetical Complement thereof be the Log. Secant required.

Example. What is the Log. Secant of $68^{\circ} 56'$?

The Log. Sine of $21^{\circ} 4'$ is per Table — 9,5556433; Which deducted from 20,0000000, leaves 10,4443567, the Log. Secant of $68^{\circ} 56'$.

The

The Use of Tables 32, 33, and 34. in Trigonometry.

I. In any plane Triangle, the Sides and Angles only being considered, if any three of those six Quantities (one of them a Side) be given, the rest may be found by using the Logarithms of Numbers, Sines, and Tangents, as follows.

C A S E I.

If among the Terms given, there be a Side and it's opposite Angle. Then,

As any Side,
To the Sine of it's opposite Angle ;
So is any other Side,
To the Sine of it's opposite Angle.

Or,

As the Sine of any Angle,
To it's opposite Side ;
So is the Sine of any other Angle,
To it's opposite Side.

C A S E II.

If two Sides and the Angle included between them be given.

Then,

(Putting m for half the Difference between 180 Degrees and the given Angle)

As the Sum of the given Sides,
To the Difference of those Sides ;
So is the Tangent of the Angle m ,
To the Tangent of an Angle n .

And the Sum of m and n will be the greater Angle required.
Also the Difference of m and n will be the lesser.

C A S E III.

If the three Sides be given. Then,

(Putting A and B for the Sides including the required Angle, C for the Side opposite thereto, and D for the Difference of A and B .)

To the Arithmetical Complements of the Logarithms of A and B , Add the Logarithms of $\frac{1}{2}$ the Sum, and of $\frac{1}{2}$ the Difference of C and D ;
Then will half the Sum of these four Logarithms be the Log. Sine of half the required Angle.

II. In

II. In right angled spheric Triangles, put H for the Hypotenuse; B , Base; P , Perpendicular; b, p , the Angles opposite the Base and Perpendicular; s , Sine; s' , Cofine; t , Tangent; t' , Co-tangent; and R , Radius: — or + signify that the Side or Angle, to which they are annexed, is less or greater than 90 Degrees; also two Sides or Angles are said to be like, when they are both less or both greater than 90 Degrees.

C	Giv.	Re.	Solution.
1	$H, B.$	$b.$ $p.$ $P.$	$s. H : R :: s. B : s. b.$ (like B .) $R : t. B :: t. H : s'. p.$ $s'. B : R :: s'. H : s'. P.$ } — if H like B , if not +
2	$H, b.$	$B.$ $P.$ $p.$	$R : s. H :: s. b. : s. B.$ (like b .) $R : s'. b. :: t. H : t. P.$ $R : t. b. :: s'. H : t'. p.$ } — if H like b , if not +
3	$B, b.$	$H.$ $P.$ $p.$	$s. b : R :: s. B : s. H.$ $R : t'. b :: t. B : s. P.$ $s'. B : R :: s'. b : s. p.$ } — and +, both true.
4	$B, p.$	$H.$ $P.$ $b.$	$R : t'. B :: s'. p : t'. H.$ (— if B like p , if not +) $R : t. p :: s. B : t. P.$ (like p .) $R : s. p :: s'. B : s'. b.$ (like B .)
5	$B, P.$	$H.$ $b.$ $p.$	$R : s'. B :: s'. P : s'. H.$ (— if B like P , if not +) $R : t'. B :: s. P : t'. b.$ (like B .) $R : t'. P :: s. B : t'. p.$ (like P .)
6	$b, p.$	$H.$ $B.$ $P.$	$R : t'. b :: t'. p : s'. H.$ (— if b like p , if not +) $s. p : R :: s'. b : s'. B.$ (like b .) $s. b : R :: s'. p : s'. P.$ (like p .)

In a spheric Triangle, where one of the Sides is 90 Degrees, call it's opposite Angle H ; change the other Sides into Angles and the Angles into Sides; the Cases with their Solutions are as above: Observing, instead of H , to take it's Supplement, and instead of *like* put *unlike*, where the Species of H determines that of a Side or Angle, or where that of H is to be determined.

In the following Table of the Solutions of oblique spheric Triangles, put $s, s', t, t', R, —, +$, and *like*, as above; Also \angle , Angle; *Sid.* Side; *g.* given; *r.* required or remaining; *op.* opposite; *ad.* adjacent; *com.* comprehended; *gr.* greater; *le.* less; *oth.* other; $m \oslash n$, the Difference of m and n ; *Diff.* Difference.

III. In

III. In oblique angled spheric Triangles,

C.	Given.	Requi.	Solution.
I	Two Sides and an Angle to one of them.	$\angle op.$	$s. Sid. op. g. < : s. g. < : : s. oth. g. Sid. : s. < r. (\mp \text{ both true.})$
		$\angle com.$	$R : s'. Sid. ad. g. < : : t. g. < : t' < m. (\text{like } Sid. ad. \text{ if } g. < -)$ $t. Sid. op. g. < : t. Sid. ad. : : s' < m : s' < n (\text{like } Sid. op. \text{ if } g. < -)$ And $\angle r. = m \pm n$ both true.
		Third Side.	$R : s'. g. < : : t. Sid. ad. g. < : : t. < m. (\text{like } Sid. ad. \text{ if } g. < -)$ $s'. Sid. ad. g. < : s'. oth. Sid. : : s' < m : s' < n. (\text{like } Sid. op. \text{ if } g. < -)$ And Side $r. = m \pm n$ both true.
		But if Then, Then	$Sid. op. g. < = Sid. ad. \text{ or } = 180^\circ - Sid. ad. \text{ or is between them,}$ $\angle op. \text{ like } Sid. ad. ;$ Also if $Sid. ad. g. <$ be like $g. <$, $\angle com.$ and $Sid. r. = m \pm n$ only, (if not) they are $= m - n$ only.
2	Two Angles and a Side op.	$Sid. op.$	$s. < op. g. Sid. : s. g. Sid. : : s. oth. g. < : s. Sid. r. (\mp \text{ both true.})$
		Side common.	$R : s'. < ad. g. Sid. : : t. g. Sid. : t. < m. (\text{like } < ad. \text{ if } g. Sid. -)$ $t. < op. g. Sid. : t. < ad. g. Sid. : : s. < m : s. < n. (\mp \text{ both true.})$ And $Sid. r. = \begin{cases} m + n \\ m - n \end{cases}$ if $< op. g. Sid. \begin{cases} \text{like} \\ \text{unl.} \end{cases} < ad.$
		Third Angle.	$R : s'. g. Sid. : : t. < ad. g. Sid. : t. < m (\text{like } < ad. \text{ if } g. Sid. -)$ $s'. < ad. g. Sid. : s'. oth. < : : s. < m : s. < n. (\mp \text{ both true.})$ And $\angle r. = \begin{cases} m + n \\ m - n \end{cases}$ if $< op. g. Sid. \begin{cases} \text{like} \\ \text{unl.} \end{cases} < ad.$
		But if Then,	$g. Sid. = r. Sid. \text{ or } = 180^\circ - r. Sid. \text{ or is between them,}$ $Sid. op. \text{ is unlike } < ad ;$ and $\angle n. \text{ only } -.$
3	Two Sides and $\angle com.$	Other Angles.	$s. \frac{1}{2} \text{ Sum Sides} : s. \frac{1}{2} \text{ Diff. Sides} : : t. \frac{1}{2} g. < : t. < n. (-)$ $s'. \frac{1}{2} \text{ Sum Sides} : s' \frac{1}{2} \text{ Diff. Sides} : : t' \frac{1}{2} g. < : t. < m (- \text{ if Sum less } 180^\circ.)$ And $m \pm n = < op. gr. Side ; m \cap n = < op. le. Sid.$
		Third Side.	Find the Angles by the Preceeding, And the Remaining Side by Case II.
4	Two Angles and a Side com-mon.	Other Sides.	$s. \frac{1}{2} \text{ Sum } < s. : s. \frac{1}{2} \text{ Diff. } < s. : : t. \frac{1}{2} g. Sid. : t. < n. (-)$ $s'. \frac{1}{2} \text{ Sum } < s. : s' \frac{1}{2} \text{ Diff. } < s. : : t. \frac{1}{2} g. Sid. : t. < m. (- \text{ if [Sum less } 180^\circ.)$ And $m \pm n = Sid. op. gr. < ; m \cap n = Sid. op. le. <.$
		Third Angle.	Find the Sides by the Preceeding, And the remaining Angle by Case I.
5	Three Sides.	An Angle.	Put A, B , for the Sides including $r. <$; $C. Sid. op. r. <$; Also $A \cap B = D$; and $L. Logarithm$; Then, $\frac{L. s. \frac{1}{2} \times C + D. + L. s. \frac{1}{2} \times C - D. - L. A. - L. B.}{2} = L. s. \frac{1}{2} < r$
6	Three Angles.	A Side.	Instead of the $gr. <$ take it's Supplement; call the Angle Sides, and the Sides Angles; Then proceed as in Case V.

Minutes.

Se.	0	1	2	3	4	5	6	7	8	9	10
1	3,5563	1,7710	1,4735	1,2986	1,1743	1,0777	9988	9320	8742	8231	7774
2	3,2553	1,7639	1,4699	1,2962	1,1725	1,0763	9976	9310	8733	8223	7767
3	3,0792	1,7570	1,4664	1,2939	1,1707	1,0749	9964	9300	8724	8215	7760
4	2,9542	1,7501	1,4629	1,2915	1,1689	1,0734	9952	9289	8715	8207	7753
5	2,8573	1,7434	1,4594	1,2891	1,1671	1,0720	9940	9279	8706	8199	7745
6	2,7782	1,7368	1,4559	1,2868	1,1654	1,0706	9928	9269	8697	8191	7738
7	2,7112	1,7302	1,4525	1,2845	1,1636	1,0692	9916	9259	8688	8183	7731
8	2,6532	1,7238	1,4491	1,2821	1,1619	1,0678	9905	9249	8679	8175	7724
9	2,6021	1,7175	1,4457	1,2798	1,1601	1,0663	9893	9238	8670	8167	7717
10	2,5563	1,7112	1,4424	1,2775	1,1584	1,0649	9881	9228	8661	8159	7710
11	2,5149	1,7050	1,4390	1,2753	1,1566	1,0635	9869	9218	8652	8152	7703
12	2,4771	1,6990	1,4357	1,2730	1,1549	1,0621	9858	9208	8643	8144	7696
13	2,4424	1,6930	1,4325	1,2707	1,1532	1,0608	9846	9198	8635	8136	7688
14	2,4102	1,6871	1,4292	1,2685	1,1515	1,0594	9834	9188	8626	8128	7681
15	2,3802	1,6812	1,4260	1,2663	1,1498	1,0580	9823	9178	8617	8120	7674
16	2,3522	1,6755	1,4228	1,2640	1,1481	1,0566	9811	9168	8608	8112	7667
17	2,3259	1,6698	1,4196	1,2618	1,1464	1,0552	9800	9158	8599	8104	7660
18	2,3010	1,6642	1,4165	1,2596	1,1447	1,0539	9788	9148	8591	8097	7653
19	2,2775	1,6587	1,4133	1,2574	1,1430	1,0525	9777	9138	8582	8089	7646
20	2,2553	1,6532	1,4102	1,2553	1,1413	1,0512	9765	9128	8573	8081	7639
21	2,2341	1,6478	1,4071	1,2531	1,1397	1,0498	9754	9119	8565	8073	7632
22	2,2139	1,6425	1,4040	1,2510	1,1380	1,0484	9742	9109	8556	8066	7625
23	2,1946	1,6372	1,4010	1,2488	1,1363	1,0471	9731	9099	8547	8058	7618
24	2,1761	1,6320	1,3979	1,2467	1,1347	1,0458	9720	9089	8539	8050	7611
25	2,1584	1,6269	1,3949	1,2445	1,1331	1,0444	9708	9079	8530	8043	7604
26	2,1413	1,6218	1,3919	1,2424	1,1314	1,0431	9697	9070	8522	8035	7597
27	2,1249	1,6168	1,3890	1,2403	1,1298	1,0418	9686	9060	8513	8027	7590
28	2,1091	1,6118	1,3860	1,2382	1,1282	1,0404	9675	9050	8504	8020	7583
29	2,0939	1,6069	1,3831	1,2362	1,1266	1,0391	9664	9041	8496	8012	7577
30	2,0792	1,6021	1,3802	1,2341	1,1249	1,0378	9652	9031	8487	8004	7570
31	2,0649	1,5973	1,3773	1,2320	1,1233	1,0365	9641	9021	8479	7997	7563
32	2,0512	1,5925	1,3745	1,2300	1,1217	1,0352	9630	9012	8470	7989	7556
33	2,0378	1,5878	1,3716	1,2279	1,1201	1,0339	9619	9002	8462	7981	7549
34	2,0248	1,5832	1,3688	1,2259	1,1186	1,0326	9608	8992	8453	7974	7542
35	2,0122	1,5786	1,3660	1,2239	1,1170	1,0313	9597	8983	8445	7966	7535
36	2,0000	1,5740	1,3632	1,2218	1,1154	1,0300	9586	8973	8437	7959	7528
37	1,9881	1,5695	1,3604	1,2198	1,1138	1,0287	9575	8964	8428	7951	7522
38	1,9765	1,5651	1,3576	1,2178	1,1123	1,0274	9564	8954	8420	7944	7515
39	1,9652	1,5607	1,3549	1,2159	1,1107	1,0261	9553	8945	8411	7936	7508
40	1,9542	1,5563	1,3522	1,2139	1,1091	1,0246	9542	8935	8403	7929	7501
41	1,9435	1,5520	1,3495	1,2119	1,1076	1,0235	9532	8926	8395	7921	7494
42	1,9331	1,5477	1,3468	1,2099	1,1061	1,0223	9521	8917	8386	7914	7488
43	1,9228	1,5435	1,3441	1,2080	1,1045	1,0210	9510	8907	8378	7906	7481
44	1,9128	1,5393	1,3415	1,2061	1,1030	1,0197	9499	8898	8370	7899	7474
45	1,9031	1,5351	1,3388	1,2041	1,1015	1,0185	9488	8888	8361	7891	7467
46	1,8935	1,5310	1,3362	1,2022	1,0999	1,0172	9478	8879	8353	7884	7461
47	1,8842	1,5269	1,3336	1,2003	1,0984	1,0160	9467	8870	8345	7877	7454
48	1,8751	1,5229	1,3310	1,1984	1,0969	1,0147	9456	8861	8337	7869	7447
49	1,8661	1,5189	1,3284	1,1965	1,0954	1,0135	9446	8851	8328	7862	7441
50	1,8573	1,5149	1,3259	1,1946	1,0939	1,0122	9435	8842	8320	7855	7434
51	1,8487	1,5110	1,3233	1,1927	1,0924	1,0110	9425	8833	8312	7847	7427
52	1,8403	1,5071	1,3208	1,1908	1,0909	1,0098	9414	8824	8304	7840	7421
53	1,8320	1,5032	1,3183	1,1889	1,0894	1,0085	9404	8814	8296	7832	7414
54	1,8239	1,4994	1,3158	1,1871	1,0880	1,0073	9393	8805	8288	7825	7407
55	1,8159	1,4956	1,3133	1,1852	1,0865	1,0061	9383	8796	8279	7818	7401
56	1,8081	1,4918	1,3108	1,1834	1,0850	1,0049	9372	8787	8271	7811	7394
57	1,8004	1,4881	1,3083	1,1816	1,0835	1,0036	9362	8778	8263	7803	7387
58	1,7929	1,4844	1,3059	1,1797	1,0821	1,0024	9351	8769	8255	7796	7381
59	1,7855	1,4808	1,3034	1,1779	1,0806	1,0012	9341	8760	8247	7789	7374
60	1,7782	1,4771	1,3010	1,1761	1,0792	1,0000	9331	8751	8239	7782	7368
Se.	0	60	120	180	240	300	360	420	480	540	600

Seconds.

Minutes.

Se.	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	7361	6984	6637	6315	6016	5736	5473	5225	4990	4768	4556	4354	4161	3976
2	7354	6978	6631	6310	6011	5731	5469	5221	4986	4764	4552	4351	4158	3973
3	7348	6972	6625	6305	6005	5727	5464	5217	4983	4760	4549	4347	4155	3970
4	7341	6966	6620	6300	6001	5722	5460	5213	4979	4757	4546	4344	4152	3967
5	7335	6960	6614	6294	5997	5718	5456	5209	4975	4753	4542	4341	4149	3964
6	7328	6954	6609	6289	5992	5713	5452	5205	4971	4750	4539	4338	4145	3961
7	7322	6948	6603	6284	5987	5709	5447	5201	4967	4746	4535	4334	4142	3958
8	7315	6941	6598	6279	5982	5704	5443	5197	4964	4742	4532	4331	4139	3955
9	7309	6935	6592	6274	5977	5700	5439	5193	4960	4739	4528	4328	4136	3952
10	7302	6930	6587	6269	5973	5695	5435	5189	4956	4735	4525	4325	4133	3949
11	7296	6924	6581	6264	5968	5691	5430	5185	4952	4732	4522	4321	4130	3946
12	7289	6918	6576	6259	5963	5686	5426	5181	4949	4728	4518	4318	4127	3943
13	7283	6912	6570	6254	5958	5682	5422	5177	4945	4724	4515	4315	4124	3940
14	7276	6906	6565	6248	5954	5677	5418	5173	4941	4721	4511	4311	4120	3937
15	7270	6900	6559	6243	5949	5673	5414	5169	4937	4717	4508	4308	4117	3934
16	7264	6894	6554	6238	5944	5669	5409	5165	4933	4714	4505	4305	4114	3931
17	7257	6888	6548	6233	5939	5664	5405	5161	4930	4710	4501	4302	4111	3928
18	7251	6882	6543	6228	5935	5660	5401	5157	4926	4707	4498	4298	4108	3925
19	7244	6877	6538	6223	5930	5655	5397	5153	4922	4703	4494	4295	4105	3922
20	7238	6871	6532	6218	5925	5651	5393	5149	4918	4699	4491	4292	4102	3919
21	7232	6865	6527	6213	5920	5646	5389	5145	4915	4696	4488	4289	4099	3917
22	7225	6859	6521	6208	5916	5642	5384	5141	4911	4692	4484	4285	4096	3914
23	7219	6853	6516	6203	5911	5637	5380	5137	4907	4689	4481	4282	4092	3911
24	7212	6847	6510	6198	5906	5633	5376	5133	4903	4685	4477	4279	4089	3908
25	7206	6841	6505	6193	5902	5629	5372	5129	4900	4682	4474	4276	4086	3905
26	7200	6836	6500	6188	5897	5624	5368	5125	4896	4678	4471	4273	4083	3902
27	7193	6830	6494	6183	5892	5620	5364	5122	4892	4675	4467	4269	4080	3899
28	7187	6824	6489	6178	5888	5615	5359	5118	4889	4671	4464	4266	4077	3896
29	7181	6818	6484	6173	5883	5611	5355	5114	4885	4668	4460	4263	4074	3893
30	7175	6812	6478	6168	5878	5607	5351	5110	4881	4664	4457	4260	4071	3890
31	7168	6807	6473	6163	5874	5602	5347	5106	4877	4660	4454	4256	4068	3887
32	7162	6801	6467	6158	5869	5598	5343	5102	4874	4657	4450	4253	4065	3884
33	7156	6795	6462	6153	5864	5594	5339	5098	4870	4653	4447	4250	4062	3881
34	7149	6789	6457	6148	5860	5589	5335	5094	4866	4650	4444	4247	4059	3878
35	7143	6784	6451	6143	5855	5585	5331	5090	4863	4646	4440	4244	4055	3875
36	7137	6778	6446	6138	5850	5580	5326	5086	4859	4643	4437	4240	4052	3872
37	7131	6772	6441	6133	5846	5576	5322	5082	4855	4639	4434	4237	4049	3869
38	7124	6766	6435	6128	5841	5572	5318	5079	4852	4636	4430	4234	4046	3866
39	7118	6761	6430	6123	5836	5567	5314	5075	4848	4632	4427	4231	4043	3863
40	7112	6755	6425	6118	5832	5563	5310	5071	4844	4629	4424	4228	4040	3860
41	7106	6749	6420	6113	5827	5559	5306	5067	4841	4625	4420	4224	4037	3857
42	7100	6743	6414	6108	5823	5554	5302	5063	4837	4622	4417	4221	4034	3855
43	7093	6738	6409	6103	5818	5550	5298	5059	4833	4618	4414	4218	4031	3852
44	7087	6732	6404	6099	5813	5546	5294	5055	4830	4615	4410	4215	4028	3849
45	7081	6726	6398	6094	5809	5541	5290	5051	4826	4611	4407	4212	4025	3846
46	7075	6721	6393	6089	5804	5537	5285	5048	4822	4608	4404	4209	4022	3843
47	7069	6715	6388	6084	5800	5533	5281	5044	4819	4604	4400	4205	4019	3840
48	7063	6709	6383	6079	5795	5528	5277	5040	4815	4601	4397	4202	4016	3837
49	7057	6704	6377	6074	5790	5524	5273	5036	4811	4597	4394	4199	4013	3834
50	7050	6698	6372	6069	5786	5520	5269	5032	4808	4594	4390	4196	4010	3831
51	7044	6692	6367	6064	5781	5516	5265	5028	4804	4590	4387	4193	4007	3828
52	7038	6687	6362	6059	5777	5511	5261	5025	4800	4587	4384	4189	4004	3825
53	7032	6681	6357	6055	5772	5507	5257	5021	4797	4584	4380	4186	4001	3822
54	7026	6676	6351	6050	5768	5503	5253	5017	4793	4580	4377	4183	3998	3820
55	7020	6670	6346	6045	5763	5498	5249	5013	4789	4577	4374	4180	3995	3817
56	7014	6664	6341	6040	5758	5494	5245	5009	4786	4573	4370	4177	3991	3814
57	7008	6659	6336	6035	5754	5490	5241	5005	4782	4570	4367	4174	3988	3811
58	7002	6653	6331	6030	5749	5486	5237	5002	4778	4566	4364	4171	3985	3808
59	6996	6648	6325	6025	5745	5481	5233	4998	4775	4563	4361	4167	3982	3805
60	6990	6642	6320	6021	5740	5477	5229	4994	4771	4559	4357	4164	3977	3803
Se.	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440

Seconds.

Minutes

Se	25	26	27	28	29	30	31	32	33	34	35	36	37
1	3799	3629	3465	3307	3155	3008	2866	2728	2594	2465	2339	2216	2098
2	3796	3626	3463	3305	3153	3005	2863	2725	2592	2462	2337	2214	2096
3	3793	3623	3460	3302	3150	3003	2861	2723	2590	2460	2335	2212	2094
4	3791	3621	3457	3300	3148	3001	2859	2721	2588	2458	2333	2210	2092
5	3788	3618	3454	3297	3145	2998	2856	2719	2585	2455	2331	2208	2090
6	3785	3615	3452	3294	3143	2996	2854	2716	2583	2454	2328	2206	2088
7	3782	3612	3449	3292	3140	2993	2852	2714	2581	2452	2326	2204	2086
8	3779	3610	3446	3289	3138	2991	2849	2712	2579	2450	2324	2202	2084
9	3776	3607	3444	3287	3135	2989	2847	2710	2577	2448	2322	2200	2082
10	3773	3604	3441	3284	3133	2986	2845	2707	2574	2445	2320	2198	2080
11	3770	3601	3438	3282	3130	2984	2842	2705	2572	2443	2318	2196	2078
12	3768	3598	3436	3279	3128	2981	2840	2703	2570	2441	2316	2194	2076
13	3765	3596	3433	3276	3125	2979	2838	2701	2568	2439	2314	2192	2074
14	3762	3593	3431	3274	3123	2977	2835	2698	2566	2437	2312	2190	2072
15	3759	3590	3428	3271	3120	2974	2833	2696	2564	2435	2310	2188	2070
16	3756	3587	3425	3269	3118	2972	2831	2694	2561	2433	2308	2186	2068
17	3753	3585	3423	3266	3115	2969	2828	2692	2559	2431	2306	2184	2066
18	3750	3582	3420	3264	3113	2967	2826	2689	2557	2429	2304	2182	2064
19	3747	3579	3417	3261	3110	2965	2824	2687	2555	2426	2302	2180	2062
20	3745	3576	3415	3259	3108	2962	2821	2685	2553	2424	2300	2178	2061
21	3742	3574	3412	3256	3105	2960	2819	2683	2551	2422	2298	2176	2059
22	3739	3571	3409	3253	3103	2958	2817	2681	2548	2420	2296	2174	2057
23	3736	3568	3407	3251	3101	2955	2815	2678	2546	2418	2294	2172	2055
24	3733	3565	3404	3248	3098	2953	2812	2676	2544	2416	2291	2170	2053
25	3730	3563	3401	3246	3096	2950	2810	2674	2542	2414	2289	2169	2051
26	3727	3560	3399	3243	3093	2948	2808	2672	2540	2412	2287	2167	2049
27	3725	3557	3396	3241	3091	2946	2805	2669	2538	2410	2285	2165	2047
28	3722	3555	3393	3238	3088	2943	2803	2667	2535	2408	2283	2163	2045
29	3719	3552	3391	3236	3086	2941	2801	2665	2533	2405	2281	2161	2043
30	3716	3549	3388	3233	3083	2939	2798	2663	2531	2403	2279	2159	2041
31	3713	3546	3386	3231	3081	2936	2796	2660	2529	2401	2277	2157	2039
32	3710	3544	3383	3228	3078	2934	2794	2658	2527	2399	2275	2155	2037
33	3708	3541	3380	3225	3076	2931	2792	2656	2525	2397	2273	2153	2035
34	3705	3538	3378	3223	3073	2929	2789	2654	2522	2395	2271	2151	2033
35	3702	3535	3375	3220	3071	2927	2787	2652	2520	2393	2269	2149	2032
36	3699	3533	3372	3218	3069	2924	2785	2649	2518	2391	2267	2147	2030
37	3696	3530	3370	3215	3066	2922	2782	2647	2516	2389	2265	2145	2028
38	3693	3527	3367	3213	3064	2920	2780	2645	2514	2387	2263	2143	2026
39	3691	3525	3365	3210	3061	2917	2778	2643	2512	2384	2261	2141	2024
40	3688	3522	3362	3208	3059	2915	2775	2640	2510	2382	2259	2139	2022
41	3685	3519	3359	3205	3056	2912	2773	2638	2507	2380	2257	2137	2020
42	3682	3516	3357	3203	3054	2910	2771	2636	2505	2378	2255	2135	2018
43	3679	3514	3354	3200	3052	2908	2769	2634	2503	2376	2253	2133	2016
44	3677	3511	3351	3198	3049	2905	2766	2632	2501	2374	2251	2131	2014
45	3674	3508	3349	3195	3047	2903	2764	2629	2499	2372	2249	2129	2012
46	3671	3506	3346	3193	3044	2901	2762	2627	2497	2370	2247	2127	2010
47	3668	3503	3344	3190	3042	2898	2760	2625	2494	2368	2245	2125	2009
48	3665	3500	3341	3188	3039	2896	2757	2623	2492	2366	2243	2123	2007
49	3663	3497	3338	3185	3037	2894	2755	2621	2490	2364	2241	2121	2005
50	3660	3495	3336	3183	3034	2891	2753	2618	2488	2362	2239	2119	2003
51	3657	3492	3333	3180	3032	2889	2750	2616	2486	2359	2237	2117	2001
52	3654	3489	3331	3178	3030	2887	2748	2614	2484	2357	2235	2115	1999
53	3651	3487	3328	3175	3027	2884	2746	2612	2482	2355	2233	2113	1997
54	3649	3484	3325	3173	3025	2882	2744	2610	2480	2353	2231	2111	1995
55	3646	3481	3323	3170	3022	2880	2741	2607	2477	2351	2229	2109	1993
56	3643	3479	3320	3168	3020	2877	2739	2605	2475	2349	2227	2107	1991
57	3640	3476	3318	3165	3018	2875	2737	2603	2473	2347	2225	2105	1989
58	3637	3473	3315	3163	3015	2873	2735	2601	2471	2345	2223	2103	1987
59	3635	3471	3313	3160	3013	2870	2732	2599	2469	2343	2220	2101	1986
60	3632	3468	3310	3158	3010	2868	2730	2596	2467	2341	2218	2099	1984
1500	1560	1620	1680	1740	1800	1860	1920	1980	2040	2100	2160	2220	

Seconds.

Minutes

Se.	38	39	40	41	42	43	44	45	46	47	48	49	50	51
1	1982	1869	1759	1652	1547	1445	1345	1248	1152	1059	968	878	790	704
2	1980	1867	1757	1650	1546	1443	1344	1246	1151	1057	966	877	789	703
3	1978	1865	1755	1648	1544	1442	1342	1245	1149	1056	965	875	787	702
4	1976	1863	1754	1647	1542	1440	1340	1243	1148	1054	963	874	786	700
5	1974	1862	1752	1645	1540	1438	1339	1241	1146	1053	962	872	785	699
6	1972	1860	1750	1643	1539	1437	1337	1240	1145	1051	960	871	783	697
7	1970	1858	1748	1641	1537	1435	1335	1238	1143	1050	959	869	782	696
8	1968	1856	1746	1640	1535	1433	1334	1237	1141	1048	957	868	780	694
9	1967	1854	1745	1638	1534	1432	1332	1235	1140	1047	956	866	779	693
10	1965	1852	1743	1636	1532	1430	1331	1233	1138	1045	954	865	777	692
11	1963	1850	1741	1634	1530	1428	1329	1232	1137	1044	953	863	776	690
12	1961	1849	1739	1633	1528	1427	1327	1230	1135	1042	951	862	774	689
13	1959	1847	1737	1631	1527	1425	1326	1229	1134	1041	950	860	773	687
14	1957	1845	1736	1629	1525	1423	1324	1227	1132	1039	948	859	772	686
15	1955	1843	1734	1627	1523	1422	1322	1225	1130	1037	947	857	770	685
16	1953	1841	1732	1626	1522	1420	1321	1224	1129	1036	945	856	769	683
17	1951	1839	1730	1624	1520	1418	1319	1222	1127	1034	944	855	767	682
18	1950	1838	1728	1622	1518	1417	1317	1221	1126	1033	942	853	766	680
19	1948	1836	1727	1620	1516	1415	1316	1219	1124	1031	941	852	764	679
20	1946	1834	1725	1619	1515	1413	1314	1217	1123	1030	939	850	763	678
21	1944	1832	1723	1617	1513	1412	1313	1216	1121	1028	938	849	762	676
22	1942	1830	1721	1615	1511	1410	1311	1214	1119	1027	936	847	760	675
23	1940	1828	1719	1613	1510	1408	1309	1213	1118	1025	935	846	759	673
24	1938	1827	1718	1612	1508	1407	1308	1211	1116	1024	933	844	757	672
25	1936	1825	1716	1610	1506	1405	1306	1209	1115	1022	932	843	756	670
26	1934	1823	1714	1608	1504	1403	1304	1208	1113	1021	930	841	754	669
27	1933	1821	1712	1606	1503	1402	1303	1206	1112	1019	929	840	753	668
28	1931	1819	1711	1605	1501	1400	1301	1205	1110	1018	927	838	751	666
29	1929	1817	1709	1603	1499	1398	1300	1203	1109	1016	926	837	750	665
30	1927	1816	1707	1601	1498	1397	1298	1201	1107	1015	924	835	749	663
31	1925	1814	1705	1599	1496	1395	1296	1200	1105	1013	923	834	747	662
32	1923	1812	1703	1598	1494	1393	1295	1198	1104	1012	921	833	746	661
33	1921	1810	1702	1596	1493	1392	1293	1197	1102	1010	920	831	744	659
34	1919	1808	1700	1594	1491	1390	1291	1195	1101	1008	918	830	743	658
35	1918	1806	1698	1592	1489	1388	1290	1193	1099	1007	917	828	741	656
36	1916	1805	1696	1591	1487	1387	1288	1192	1098	1005	915	827	740	655
37	1914	1803	1694	1589	1486	1385	1287	1190	1096	1004	914	825	739	654
38	1912	1801	1692	1587	1484	1383	1285	1189	1095	1002	912	824	737	652
39	1910	1799	1691	1585	1482	1382	1283	1187	1093	1001	911	822	736	651
40	1908	1797	1689	1584	1481	1380	1282	1186	1091	999	909	821	734	649
41	1906	1795	1687	1582	1479	1378	1280	1184	1090	998	908	819	733	648
42	1904	1794	1686	1580	1477	1377	1278	1182	1088	996	906	818	731	647
43	1903	1792	1684	1578	1476	1375	1277	1181	1087	995	905	816	730	645
44	1901	1790	1682	1577	1474	1373	1275	1179	1085	993	903	815	729	644
45	1899	1788	1680	1575	1472	1372	1274	1178	1084	992	902	814	727	642
46	1897	1786	1678	1573	1470	1370	1272	1176	1082	990	900	812	726	641
47	1895	1785	1677	1571	1469	1368	1270	1174	1081	989	899	811	724	640
48	1893	1783	1675	1570	1467	1367	1269	1173	1079	987	897	809	723	638
49	1891	1781	1673	1568	1465	1365	1267	1171	1078	986	896	808	721	637
50	1889	1779	1671	1566	1464	1363	1266	1170	1076	984	894	806	720	635
51	1888	1777	1670	1565	1462	1362	1264	1168	1074	983	893	805	719	634
52	1886	1775	1668	1563	1460	1360	1262	1167	1073	981	891	803	717	633
53	1884	1774	1666	1561	1459	1359	1261	1165	1071	980	890	802	716	631
54	1882	1772	1664	1559	1457	1357	1259	1163	1070	978	888	801	714	630
55	1880	1770	1663	1558	1455	1355	1257	1162	1068	977	887	799	713	628
56	1878	1768	1661	1556	1454	1354	1256	1160	1067	975	885	798	711	627
57	1876	1766	1659	1554	1452	1352	1254	1159	1065	974	884	796	710	626
58	1875	1765	1657	1552	1450	1350	1253	1157	1064	972	883	795	709	624
59	1873	1763	1655	1551	1449	1349	1251	1156	1062	971	881	793	707	623
60	187	1761	1654	1549	1447	1347	1249	1154	1061	969	880	792	706	621
S.	2280	2340	2400	2460	2520	2580	2640	2700	2760	2820	2880	2940	3000	

Seconds.

Minutes

S.	52	53	54	55	56	57	58	59	60	61	62	63	64	65
1	620	537	456	377	298	221	146	072	9999	9927	9856	9787	9719	9651
2	619	536	455	375	297	220	145	071	9998	9926	9855	9786	9717	9650
3	617	535	454	374	296	219	143	069	9996	9925	9854	9785	9716	9649
4	619	533	452	373	294	218	142	068	9995	9923	9853	9784	9715	9648
5	615	532	451	371	293	216	141	067	9994	9922	9852	9782	9714	9647
6	613	531	450	370	292	215	140	066	9993	9921	9851	9781	9713	9646
7	612	529	448	369	291	214	139	064	9992	9920	9849	9780	9712	9645
8	610	528	447	367	289	213	137	063	9990	9919	9848	9779	9711	9643
9	609	526	446	366	288	211	136	062	9989	9918	9847	9778	9710	9642
10	608	525	444	365	287	210	135	061	9988	9916	9846	9777	9708	9641
11	606	524	443	363	285	209	134	060	9987	9915	9845	9775	9707	9640
12	605	522	442	362	284	208	132	058	9986	9914	9844	9774	9706	9639
13	603	521	440	361	283	206	131	057	9984	9913	9842	9773	9705	9638
14	602	520	439	359	282	205	130	056	9983	9912	9841	9772	9704	9637
15	601	518	438	358	280	204	129	055	9982	9910	9840	9771	9703	9636
16	599	517	436	357	279	202	127	053	9981	9909	9839	9770	9702	9635
17	598	516	435	356	278	201	126	052	9980	9908	9838	9769	9701	9633
18	596	514	434	354	276	200	125	051	9978	9907	9837	9767	9699	9632
19	595	513	432	353	275	199	124	050	9977	9906	9835	9766	9698	9631
20	594	512	431	352	274	197	122	049	9976	9905	9834	9765	9697	9630
21	592	510	430	350	273	196	121	047	9975	9903	9833	9764	9696	9629
22	591	509	428	349	271	195	120	046	9974	9902	9832	9763	9695	9628
23	590	507	427	348	270	194	119	045	9972	9901	9831	9762	9694	9627
24	588	506	426	346	269	192	117	044	9971	9900	9830	9761	9693	9626
25	587	505	424	345	267	191	116	042	9970	9899	9829	9759	9692	9625
26	585	503	423	344	266	190	115	041	9969	9897	9827	9758	9690	9624
27	584	502	422	342	265	189	114	040	9968	9896	9826	9757	9689	9622
28	583	501	420	341	264	187	112	039	9966	9895	9825	9756	9688	9621
29	581	499	419	340	262	186	111	038	9965	9894	9824	9755	9687	9620
30	580	498	418	339	261	185	110	036	9964	9893	9823	9754	9686	9619
31	579	497	416	337	260	184	109	035	9963	9892	9822	9753	9685	9618
32	577	495	415	336	258	182	107	034	9962	9890	9820	9751	9684	9617
33	576	494	414	335	257	181	106	033	9960	9889	9819	9750	9683	9616
34	574	493	412	333	256	180	105	031	9959	9888	9818	9749	9681	9615
35	573	491	411	332	255	179	104	030	9958	9887	9817	9748	9680	9614
36	572	490	410	331	253	177	103	029	9957	9886	9816	9747	9679	9612
37	570	489	408	329	252	176	101	028	9956	9885	9815	9746	9678	9611
38	569	487	407	328	251	175	100	027	9954	9883	9813	9745	9677	9610
39	568	486	406	327	250	174	099	025	9953	9882	9812	9744	9676	9619
40	566	484	404	326	248	172	098	024	9952	9881	9811	9742	9675	9618
41	565	483	403	324	247	171	096	023	9951	9880	9810	9741	9674	9607
42	563	482	402	323	246	170	095	022	9950	9879	9809	9740	9672	9606
43	562	480	400	322	244	169	094	021	9948	9877	9808	9739	9671	9605
44	561	479	399	320	243	167	093	019	9947	9876	9807	9738	9670	9604
45	559	478	398	319	242	166	091	018	9946	9875	9805	9737	9669	9603
46	558	476	396	318	241	165	090	017	9945	9874	9804	9736	9668	9601
47	557	475	395	316	239	163	089	016	9944	9873	9803	9734	9667	9600
48	555	474	394	315	238	162	088	015	9942	9872	9802	9733	9666	9599
49	554	472	392	314	237	161	087	013	9941	9870	9801	9732	9665	9598
50	552	471	391	313	235	160	085	012	9940	9869	9800	9731	9664	9597
51	551	470	390	311	234	158	084	011	9939	9868	9798	9730	9662	9596
52	550	468	388	310	233	157	083	010	9938	9867	9797	9729	9661	9595
53	548	467	387	309	232	156	082	008	9937	9866	9796	9728	9660	9594
54	547	466	386	307	230	155	080	007	9935	9865	9795	9727	9659	9593
55	546	464	384	306	229	153	079	006	9934	9863	9794	9725	9658	9592
56	544	463	383	305	228	152	078	005	9933	9862	9793	9724	9657	9590
57	543	462	382	304	227	151	077	004	9932	9861	9792	9723	9656	9589
58	541	460	381	302	225	150	075	002	9931	9860	9790	9722	9655	9588
59	540	459	379	301	224	148	074	001	9929	9859	9789	9721	9653	9587
60	539	458	378	300	223	148	073	000	9928	9858	9788	9720	9652	9586
S.	3120	3180	3240	3300	3360	3420	3480	3540	3600	3660	3720	3780	3840	3900

Seconds.

Minutes

S.	66	67	68	69	70	71	72	73	74	75	76	77	78	79
1	9585	9520	9455	9392	9329	9268	9207	9147	9088	9030	8972	8916	8860	8804
2	9584	9519	9454	9391	9328	9267	9206	9146	9087	9029	8971	8915	8859	8803
3	9583	9518	9453	9390	9327	9266	9205	9145	9086	9028	8971	8914	8858	8802
4	9582	9516	9452	9389	9326	9265	9204	9144	9085	9027	8970	8913	8857	8802
5	9581	9515	9451	9388	9325	9264	9203	9143	9084	9026	8969	8912	8856	8801
6	9579	9514	9450	9387	9324	9263	9202	9142	9083	9025	8968	8911	8855	8800
7	9578	9513	9449	9386	9323	9262	9201	9141	9082	9024	8967	8910	8854	8799
8	9577	9512	9448	9385	9322	9261	9200	9140	9081	9023	8966	8909	8853	8798
9	9576	9511	9447	9384	9321	9260	9199	9139	9080	9022	8965	8908	8852	8797
10	9575	9510	9446	9383	9320	9259	9198	9138	9079	9021	8964	8907	8851	8796
11	9574	9509	9445	9381	9319	9258	9197	9137	9078	9020	8963	8906	8850	8795
12	9573	9508	9444	9380	9318	9257	9196	9136	9077	9019	8962	8905	8849	8794
13	9572	9507	9443	9379	9317	9256	9195	9135	9076	9018	8961	8904	8848	8793
14	9571	9506	9442	9378	9316	9255	9194	9134	9076	9017	8960	8903	8847	8792
15	9570	9505	9440	9377	9315	9254	9193	9133	9075	9016	8959	8903	8847	8792
16	9569	9504	9439	9376	9314	9253	9192	9132	9074	9015	8958	8902	8846	8791
17	9567	9502	9438	9375	9313	9252	9191	9131	9073	9015	8957	8901	8845	8790
18	9566	9501	9437	9374	9312	9251	9190	9130	9072	9014	8956	8900	8844	8789
19	9565	9500	9436	9373	9311	9250	9189	9129	9071	9013	8955	8899	8843	8788
20	9564	9499	9435	9372	9310	9249	9188	9128	9070	9012	8954	8898	8842	8787
21	9563	9498	9434	9371	9309	9248	9187	9128	9069	9011	8953	8897	8841	8786
22	9562	9497	9433	9370	9308	9247	9186	9127	9068	9010	8952	8896	8840	8785
23	9561	9496	9432	9369	9307	9246	9185	9126	9067	9009	8952	8895	8839	8784
24	9560	9495	9431	9368	9306	9245	9184	9125	9066	9008	8951	8894	8838	8783
25	9559	9494	9430	9367	9305	9244	9183	9124	9065	9007	8950	8893	8837	8782
26	9558	9493	9429	9366	9304	9243	9182	9123	9064	9006	8949	8892	8837	8781
27	9557	9492	9428	9365	9303	9241	9181	9122	9063	9005	8948	8891	8836	8781
28	9555	9491	9427	9364	9302	9240	9180	9121	9062	9004	8947	8890	8835	8780
29	9554	9490	9426	9363	9301	9239	9179	9120	9061	9003	8946	8889	8834	8779
30	9553	9488	9425	9362	9300	9238	9178	9119	9060	9002	8945	8888	8833	8778
31	9552	9487	9424	9361	9299	9237	9177	9118	9059	9001	8944	8888	8832	8777
32	9551	9486	9422	9360	9298	9236	9176	9117	9058	9000	8943	8887	8831	8776
33	9550	9485	9421	9359	9297	9235	9175	9116	9057	8999	8942	8886	8830	8775
34	9549	9484	9420	9358	9296	9234	9174	9115	9056	8998	8941	8885	8829	8774
35	9548	9483	9419	9356	9294	9233	9173	9114	9055	8997	8940	8884	8828	8773
36	9547	9482	9418	9355	9293	9232	9172	9113	9054	8996	8939	8883	8827	8772
37	9546	9481	9417	9354	9292	9231	9171	9112	9053	8995	8938	8882	8826	8771
38	9545	9480	9416	9353	9291	9230	9170	9111	9052	8994	8937	8881	8825	8771
39	9544	9479	9415	9352	9290	9229	9169	9110	9051	8993	8936	8880	8825	8770
40	9542	9478	9414	9351	9289	9228	9168	9109	9050	8992	8935	8879	8824	8769
41	9541	9477	9413	9350	9288	9227	9167	9108	9049	8992	8935	8878	8823	8768
42	9540	9476	9412	9349	9287	9226	9166	9107	9048	8991	8934	8877	8822	8767
43	9539	9475	9411	9348	9286	9225	9165	9106	9047	8990	8933	8876	8821	8766
44	9538	9473	9410	9347	9285	9224	9164	9105	9046	8989	8932	8875	8820	8765
45	9537	9472	9409	9346	9284	9223	9163	9104	9045	8988	8931	8875	8819	8764
46	9536	9471	9408	9345	9283	9222	9162	9103	9044	8987	8930	8874	8818	8763
47	9535	9470	9407	9344	9282	9221	9161	9102	9043	8986	8929	8873	8817	8761
48	9534	9469	9406	9343	9281	9220	9160	9101	9042	8985	8928	8872	8816	8761
49	9533	9468	9405	9342	9280	9219	9159	9100	9042	8984	8927	8871	8815	8761
50	9532	9467	9404	9341	9279	9218	9158	9099	9041	8983	8926	8870	8814	8760
51	9530	9466	9402	9340	9278	9217	9157	9098	9040	8982	8925	8869	8813	8759
52	9529	9465	9401	9339	9277	9216	9156	9097	9039	8981	8924	8868	8813	8758
53	9528	9464	9400	9338	9276	9215	9155	9096	9038	8980	8923	8867	8812	8757
54	9527	9463	9399	9337	9275	9214	9154	9095	9037	8979	8922	8866	8811	8756
55	9526	9462	9398	9336	9274	9213	9153	9094	9036	8978	8921	8865	8810	8755
56	9525	9461	9397	9335	9273	9212	9152	9093	9035	8977	8920	8864	8809	8754
57	9524	9460	9396	9334	9272	9211	9151	9091	9034	8976	8919	8863	8808	8753
58	9523	9459	9395	9333	9271	9210	9150	9091	9033	8975	8918	8862	8807	8752
59	9522	9457	9394	9332	9270	9209	9149	9090	9032	8974	8918	8861	8806	8752
60	521	9456	9393	9331	9269	9208	9148	9089	9031	8973	8917	8861	8805	8751
S.	3960	4020	4080	4140	4200	4260	4320	4380	4440	4500	4560	4620	4680	4740

Seconds.

CL.	Nep. Log	CL.	Nep. Log	CL.	Nep. Log	CL.	Nep. Log
000	.00,000,000	063	1.45,062,861	126	2.90,125,723	189	4.35,188,582
001	.02,302,585	064	1.47,365,446	127	2.92,428,307	190	4.37,491,167
002	.04,605,170	065	1.49,668,031	128	2.94,730,892	191	4.39,793,752
003	.06,907,755	066	1.51,970,617	129	2.97,033,477	192	4.42,096,337
004	.09,210,340	067	1.54,273,202	130	2.99,336,062	193	4.44,398,922
005	.11,512,925	068	1.56,575,787	131	3.01,638,647	194	4.46,701,507
006	.13,815,510	069	1.58,878,372	132	3.03,941,232	195	4.49,004,092
007	.16,118,096	070	1.61,180,957	133	3.06,243,817	196	4.51,306,678
008	.18,420,681	071	1.63,483,542	134	3.08,546,402	197	4.53,609,263
009	.20,723,266	072	1.65,786,127	135	3.10,848,987	198	4.55,911,848
010	.23,025,851	073	1.68,088,712	136	3.13,151,573	199	4.58,214,433
011	.25,328,436	074	1.70,391,297	137	3.15,454,158	200	4.60,517,019
012	.27,631,021	075	1.72,693,882	138	3.17,756,743	201	4.62,819,604
013	.29,933,606	076	1.74,996,467	139	3.20,059,328	202	4.65,122,189
014	.32,236,191	077	1.77,299,052	140	3.22,361,913	203	4.67,424,774
015	.34,538,776	078	1.79,601,637	141	3.24,664,498	204	4.69,727,359
016	.36,841,362	079	1.81,904,222	142	3.26,967,083	205	4.72,029,944
017	.39,143,947	080	1.84,206,807	143	3.29,269,668	206	4.74,332,530
018	.41,446,532	081	1.86,509,392	144	3.31,572,253	207	4.76,635,115
019	.43,749,117	082	1.88,811,977	145	3.33,874,838	208	4.78,937,700
020	.46,051,702	083	1.91,114,562	146	3.36,177,424	209	4.81,240,285
021	.48,354,287	084	1.93,417,147	147	3.38,480,009	210	4.83,542,870
022	.50,656,872	085	1.95,719,732	148	3.40,782,594	211	4.85,845,455
023	.52,959,457	086	1.98,022,318	149	3.43,085,179	212	4.88,148,040
024	.55,262,042	087	2.00,324,903	150	3.45,387,764	213	4.90,450,625
025	.57,564,627	088	2.02,627,488	151	3.47,690,349	214	4.92,753,210
026	.59,867,213	089	2.04,930,073	152	3.49,992,934	215	4.95,055,795
027	.62,169,798	090	2.07,232,658	153	3.52,295,519	216	4.97,358,381
028	.64,472,383	091	2.09,535,243	154	3.54,598,104	217	4.99,660,966
029	.66,774,968	092	2.11,837,828	155	3.56,900,689	218	5.01,963,551
030	.69,077,553	093	2.14,140,413	156	3.59,203,275	219	5.04,266,136
031	.71,380,138	094	2.16,442,998	157	3.61,505,860	220	5.06,568,721
032	.73,682,723	095	2.18,745,583	158	3.63,808,445	221	5.08,871,306
033	.75,985,308	096	2.21,048,169	159	3.66,111,030	222	5.11,173,891
034	.78,287,893	097	2.23,350,754	160	3.68,413,615	223	5.13,476,476
035	.80,590,478	098	2.25,653,339	161	3.70,716,200	224	5.15,779,061
036	.82,893,064	099	2.27,955,924	162	3.73,018,785	225	5.18,081,646
037	.85,195,649	100	2.30,258,509	163	3.75,321,370	226	5.20,384,232
038	.87,498,234	101	2.32,561,094	164	3.77,623,955	227	5.22,686,817
039	.89,800,819	102	2.34,863,679	165	3.79,926,540	228	5.24,989,402
040	.92,103,404	103	2.37,166,264	166	3.82,229,126	229	5.27,291,987
041	.94,405,989	104	2.39,468,849	167	3.84,531,711	230	5.29,594,572
042	.96,708,574	105	2.41,771,434	168	3.86,834,296	231	5.31,897,157
043	.99,011,159	106	2.44,074,020	169	3.89,136,881	232	5.34,199,742
044	1.01,313,744	107	2.46,376,605	170	3.91,439,466	233	5.36,502,327
045	1.03,616,329	108	2.48,679,190	171	3.93,742,051	234	5.38,804,912
046	1.05,918,915	109	2.50,981,775	172	3.96,044,636	235	5.41,107,497
047	1.08,221,500	110	2.53,284,360	173	3.98,347,221	236	5.43,410,083
048	1.10,524,085	111	2.55,586,945	174	4.00,649,806	237	5.45,712,668
049	1.12,826,670	112	2.57,889,530	175	4.02,952,391	238	5.48,015,253
050	1.15,129,255	113	2.60,192,115	176	4.05,254,976	239	5.50,317,838
051	1.17,431,840	114	2.62,494,700	177	4.07,557,561	240	5.52,620,423
052	1.19,734,425	115	2.64,797,285	178	4.09,860,146	241	5.54,923,008
053	1.22,037,010	116	2.67,099,871	179	4.12,162,731	242	5.57,225,593
054	1.24,339,595	117	2.69,402,456	180	4.14,465,316	243	5.59,528,178
055	1.26,642,180	118	2.71,705,041	181	4.16,767,901	244	5.61,830,763
056	1.28,944,766	119	2.74,007,626	182	4.19,070,486	245	5.64,133,348
057	1.31,247,351	120	2.76,310,211	183	4.21,373,071	246	5.66,435,934
058	1.33,549,936	121	2.78,612,796	184	4.23,675,656	247	5.68,738,519
059	1.35,852,521	122	2.80,915,381	185	4.25,978,241	248	5.71,041,104
060	1.38,155,106	123	2.83,217,966	186	4.28,280,827	249	5.73,343,689
061	1.40,457,691	124	2.85,520,551	187	4.30,583,412	250	5.75,646,274
062	1.42,760,276	125	2.87,823,136	188	4.32,885,997	251	5.77,948,859

CL	Nep. Log	CL	Nep. Log	CL	Nep. Log	CL	Nep. Log
252	5.80,251,444	315	7.25,314,304	378	8.70,377,165	441	10.15,440,026
253	5.82,554,029	316	7.27,616,890	379	8.72,679,750	442	10.17,742,611
254	5.84,856,614	317	7.29,919,475	380	8.74,982,335	443	10.20,045,196
255	5.87,159,199	318	7.32,222,060	381	8.77,284,920	444	10.22,347,781
256	5.89,461,784	319	7.34,524,645	382	8.79,587,505	445	10.24,650,366
257	5.91,764,369	320	7.36,827,230	383	8.81,890,090	446	10.26,952,952
258	5.94,066,954	321	7.39,129,815	384	8.84,192,675	447	10.29,255,537
259	5.96,369,539	322	7.41,432,400	385	8.86,495,260	448	10.31,558,122
260	5.98,672,124	323	7.43,734,985	386	8.88,797,846	449	10.33,860,707
261	6.00,974,709	324	7.46,037,570	387	8.91,100,431	450	10.36,163,292
262	6.03,277,294	325	7.48,340,155	388	8.93,403,016	451	0.38,465,877
263	6.05,579,879	326	7.50,642,741	389	8.95,705,601	452	10.40,768,462
264	6.07,882,464	327	7.52,945,326	390	8.98,008,186	453	10.43,071,047
265	6.10,185,049	328	7.55,247,911	391	9.00,310,771	454	10.45,373,632
266	6.12,487,635	329	7.57,550,496	392	9.02,613,356	455	10.47,676,217
267	6.14,790,220	330	7.59,853,081	393	9.04,915,941	456	10.49,978,802
268	6.17,092,805	331	7.62,155,666	394	9.07,218,526	457	10.52,281,387
269	6.19,395,390	332	7.64,458,251	395	9.09,521,111	458	10.54,583,972
270	6.21,697,975	333	7.66,760,836	396	9.11,823,697	459	10.56,886,557
271	6.24,000,560	334	7.69,063,421	397	9.14,126,282	460	10.59,189,142
272	6.26,303,145	335	7.71,366,006	398	9.16,428,867	461	10.61,491,727
273	6.28,605,730	336	7.73,668,592	399	9.18,731,452	462	10.63,794,312
274	6.30,908,315	337	7.75,971,177	400	9.21,034,037	463	10.66,096,897
275	6.33,210,900	338	7.78,273,762	401	9.23,336,622	464	10.68,399,482
276	6.35,513,486	339	7.80,576,347	402	9.25,639,207	465	10.70,702,067
277	6.37,816,071	340	7.82,878,932	403	9.27,941,792	466	10.73,004,653
278	6.40,118,656	341	7.85,181,517	404	9.30,244,377	467	10.75,307,238
279	6.42,421,241	342	7.87,484,102	405	9.32,546,962	468	10.77,609,823
280	6.44,723,826	343	7.89,786,687	406	9.34,849,548	469	10.79,912,408
281	6.47,025,411	344	7.92,089,272	407	9.37,152,133	470	10.82,214,993
282	6.49,328,996	345	7.94,391,857	408	9.39,454,718	471	10.84,517,578
283	6.51,631,581	346	7.96,694,443	409	9.41,757,303	472	10.86,820,163
284	6.53,934,166	347	7.98,997,028	410	9.44,059,888	473	10.89,122,748
285	6.56,236,751	348	8.01,299,613	411	9.46,362,473	474	10.91,425,333
286	6.58,539,337	349	8.03,602,198	412	9.48,665,058	475	10.93,727,918
287	6.60,841,922	350	8.05,904,783	413	9.50,967,643	476	10.96,030,504
288	6.63,144,507	351	8.08,207,368	414	9.53,270,228	477	10.98,333,089
289	6.65,447,092	352	8.10,509,953	415	9.55,572,813	478	11.00,635,674
290	6.67,749,677	353	8.12,812,538	416	9.57,875,398	479	11.02,938,259
291	6.70,052,262	354	8.15,115,123	417	9.60,177,984	480	11.05,240,844
292	6.72,354,847	355	8.17,417,708	418	9.62,480,569	481	11.07,543,429
293	6.74,657,432	356	8.19,720,293	419	9.64,783,154	482	11.09,846,014
294	6.76,960,017	357	8.22,022,878	420	9.67,085,739	483	11.12,148,599
295	6.79,262,602	358	8.24,325,463	421	9.69,388,324	484	11.14,451,184
296	6.81,565,188	359	8.26,628,048	422	9.71,690,909	485	11.16,753,769
297	6.83,867,773	360	8.28,930,633	423	9.73,993,494	486	11.19,056,355
298	6.86,170,358	361	8.31,233,218	424	9.76,296,079	487	11.21,358,940
299	6.88,472,943	362	8.33,535,803	425	9.78,598,664	488	11.23,661,525
300	6.90,775,528	363	8.35,838,388	426	9.80,901,250	489	11.25,964,110
301	6.93,078,113	364	8.38,140,973	427	9.83,203,835	490	11.28,266,695
302	6.95,380,698	365	8.40,443,558	428	9.85,506,420	491	11.30,569,280
303	6.97,683,283	366	8.42,746,144	429	9.87,809,005	492	11.32,871,865
304	6.99,985,868	367	8.45,048,729	430	9.90,111,590	493	11.35,174,450
305	7.02,288,453	368	8.47,351,314	431	9.92,414,175	494	11.37,477,035
306	7.04,591,039	369	8.49,653,899	432	9.94,716,760	495	11.39,779,620
307	7.06,893,624	370	8.51,956,484	433	9.97,019,345	496	11.42,082,206
308	7.09,196,209	371	8.54,259,069	434	9.99,321,930	497	11.44,384,791
309	7.11,498,794	372	8.56,561,654	435	10.01,624,515	498	11.46,687,376
310	7.13,801,379	373	8.58,864,239	436	10.03,927,100	499	11.48,989,961
311	7.16,103,964	374	8.61,166,824	437	10.06,229,686	500	11.51,292,546
312	7.18,406,549	375	8.63,469,409	438	10.08,532,271	501	11.53,595,131
313	7.20,709,134	376	8.65,771,994	439	10.10,834,856	502	11.55,897,716
314	7.23,011,719	377	8.68,074,579	440	10.13,137,441	503	11.58,200,301

CL.	Nep. Log.	CL.	Nep. Log.	CL.	Nep. Log.	CL.	Nep. Log.
504	11.60,502,886	566	13.03,263,163	628	14.46,023,439	690	15.88,783,714
505	11.62,805,471	567	13.05,565,748	629	14.48,326,024	691	15.91,086,299
506	11.65,108,057	568	13.07,868,333	630	14.50,628,609	692	15.93,388,884
507	11.67,410,642	569	13.10,170,918	631	14.52,931,194	693	15.95,691,469
508	11.69,713,227	570	13.12,473,503	632	14.55,233,779	694	15.97,994,054
509	11.72,015,812	571	13.14,776,088	633	14.57,536,364	695	16.00,296,639
510	11.74,318,397	572	13.17,078,673	634	14.59,838,949	696	16.02,599,225
511	11.76,620,982	573	13.19,381,258	635	14.62,141,534	697	16.04,901,810
512	11.78,923,567	574	13.21,683,843	636	14.64,444,120	698	16.07,204,395
513	11.81,226,152	575	13.23,986,428	637	14.66,746,705	699	16.09,506,980
514	11.83,528,737	576	13.26,289,014	638	14.69,049,290	700	16.11,809,565
515	11.85,831,322	577	13.28,591,599	639	14.71,351,875	701	16.14,112,150
516	11.88,133,908	578	13.30,894,184	640	14.73,654,460	702	16.16,414,735
517	11.90,436,493	579	13.33,196,769	641	14.75,957,045	703	16.18,717,320
518	11.92,739,078	580	13.35,499,354	642	14.78,259,630	704	16.21,019,905
519	11.95,041,663	581	13.37,801,939	643	14.80,562,215	705	16.23,322,490
520	11.97,344,248	582	13.40,104,524	644	14.82,864,800	706	16.25,625,076
521	11.99,646,833	583	13.42,407,109	645	14.85,167,385	707	16.27,927,661
522	12.01,949,418	584	13.44,709,694	646	14.87,469,971	708	16.30,230,246
523	12.04,252,003	585	13.47,012,279	647	14.89,772,556	709	16.32,532,831
524	12.06,554,588	586	13.49,314,865	648	14.92,075,141	710	16.34,835,416
525	12.08,857,173	587	13.51,617,450	649	14.94,377,726	711	16.37,138,001
526	12.11,159,759	588	13.53,920,035	650	14.96,680,311	712	16.39,440,586
527	12.13,462,344	589	13.56,222,620	651	14.98,982,896	713	16.41,743,171
528	12.15,764,929	590	13.58,525,205	652	15.01,285,481	714	16.44,045,756
529	12.18,067,514	591	13.60,827,790	653	15.03,588,066	715	16.46,348,341
530	12.20,370,099	592	13.63,130,375	654	15.05,890,651	716	16.48,650,927
531	12.22,672,684	593	13.65,432,960	655	15.08,193,236	717	16.50,953,512
532	12.24,975,269	594	13.67,735,545	656	15.10,495,821	718	16.53,256,097
533	12.27,277,854	595	13.70,038,130	657	15.12,798,406	719	16.55,558,682
534	12.29,580,439	596	13.72,340,716	658	15.15,100,991	720	16.57,861,267
535	12.31,883,024	597	13.74,643,301	659	15.17,403,576	721	16.60,163,852
536	12.34,185,610	598	13.76,945,886	660	15.19,706,161	722	16.62,466,437
537	12.36,488,195	599	13.79,248,471	661	15.22,008,746	723	16.64,769,022
538	12.38,790,780	600	13.81,551,056	662	15.24,311,331	724	16.67,071,607
539	12.41,093,365	601	13.83,853,641	663	15.26,613,916	725	16.69,374,192
540	12.43,395,950	602	13.86,156,226	664	15.28,916,501	726	16.71,676,778
541	12.45,698,535	603	13.88,458,811	665	15.31,219,086	727	16.73,979,363
542	12.48,001,120	604	13.90,761,396	666	15.33,521,672	728	16.76,281,948
543	12.50,303,705	605	13.93,063,981	667	15.35,824,257	729	16.78,584,533
544	12.52,606,290	606	13.95,366,567	668	15.38,126,842	730	16.80,887,118
545	12.54,908,875	607	13.97,669,152	669	15.40,429,427	731	16.83,189,703
546	12.57,211,461	608	13.99,971,737	670	15.42,732,012	732	16.85,492,288
547	12.59,514,046	609	14.02,274,322	671	15.45,034,597	733	16.87,794,873
548	12.61,816,631	610	14.04,576,907	672	15.47,337,182	734	16.90,097,458
549	12.64,119,216	611	14.06,879,492	673	15.49,639,767	735	16.92,400,043
550	12.66,421,801	612	14.09,182,077	674	15.51,942,352	736	16.94,702,629
551	12.68,724,386	613	14.11,484,662	675	15.54,244,937	737	16.97,005,214
552	12.71,026,971	614	14.13,787,247	676	15.56,547,523	738	16.99,307,799
553	12.73,329,556	615	14.16,089,832	677	15.58,850,108	739	17.01,610,384
554	12.75,632,141	616	14.18,392,418	678	15.61,152,693	740	17.03,912,969
555	12.77,934,726	617	14.20,695,003	679	15.63,455,278	741	17.06,215,554
556	12.80,237,312	618	14.22,997,588	680	15.65,757,863	742	17.08,518,139
557	12.82,539,897	619	14.25,300,173	681	15.68,060,448	743	17.10,820,724
558	12.84,842,482	620	14.27,602,758	682	15.70,363,033	744	17.13,123,309
559	12.87,145,067	621	14.29,905,343	683	15.72,665,618	745	17.15,425,894
560	12.89,447,652	622	14.32,207,928	684	15.74,968,203	746	17.17,728,480
561	12.91,750,237	623	14.34,510,513	685	15.77,270,788	747	17.20,031,065
562	12.94,052,822	624	14.36,813,098	686	15.79,573,374	748	17.22,333,650
563	12.96,355,407	625	14.39,115,683	687	15.81,875,959	749	17.24,636,235
564	12.98,657,992	626	14.41,418,268	688	15.84,178,544	750	17.26,938,820
565	13.00,960,577	627	14.43,720,853	689	15.86,481,129	751	17.29,241,405

CL	Nep. Log	CL	Nep. Log	CL	Nep. Log	CL	Nep. Log
752	17.31,543,990	814	18.74,304,265	876	20.17,064,542	938	21.59,824,818
753	17.33,846,575	815	18.76,606,850	877	20.19,367,127	939	21.62,127,403
754	17.36,149,160	816	18.78,909,435	878	20.21,669,712	940	21.64,429,988
755	17.38,451,745	817	18.81,212,021	879	20.23,972,297	941	21.66,732,573
756	17.40,754,330	818	18.83,514,606	880	20.26,274,882	942	21.69,035,158
757	17.43,056,915	819	18.85,817,191	881	20.28,577,467	943	21.71,337,743
758	17.45,359,500	820	18.88,119,776	882	20.30,880,052	944	21.73,640,328
759	17.47,662,085	821	18.90,422,361	883	20.33,182,637	945	21.75,942,913
760	17.49,964,670	822	18.92,724,946	884	20.35,485,222	946	21.78,245,499
761	17.52,267,255	823	18.95,027,531	885	20.37,787,808	947	21.80,548,084
762	17.54,569,840	824	18.97,330,116	886	20.40,090,393	948	21.82,850,669
763	17.56,872,425	825	18.99,632,701	887	20.42,392,978	949	21.85,153,254
764	17.59,175,010	826	19.01,935,287	888	20.44,695,563	950	21.87,455,839
765	17.61,477,595	827	19.04,237,872	889	20.46,998,148	951	21.89,758,424
766	17.63,780,181	828	19.06,540,457	890	20.49,300,733	952	21.92,061,009
767	17.66,082,766	829	19.08,843,042	891	20.51,603,318	953	21.94,363,594
768	17.68,385,351	830	19.11,145,627	892	20.53,905,903	954	21.96,666,179
769	17.70,687,936	831	19.13,448,212	893	20.56,208,488	955	21.98,968,764
770	17.72,990,521	832	19.15,750,797	894	20.58,511,073	956	22.01,271,349
771	17.75,293,106	833	19.18,053,382	895	20.60,813,658	957	22.03,573,934
772	17.77,595,691	834	19.20,355,967	896	20.63,116,244	958	22.05,876,519
773	17.79,898,276	835	19.22,658,552	897	20.65,418,829	959	22.08,179,104
774	17.82,200,861	836	19.24,961,138	898	20.67,721,414	960	22.10,481,689
775	17.84,503,446	837	19.27,263,723	899	20.70,023,999	961	22.12,784,274
776	17.86,806,032	838	19.29,566,308	900	20.72,326,584	962	22.15,086,859
777	17.89,108,617	839	19.31,868,893	901	20.74,629,169	963	22.17,389,444
778	17.91,411,202	840	19.34,171,478	902	20.76,931,754	964	22.19,692,029
779	17.93,713,787	841	19.36,474,063	903	20.79,234,339	965	22.21,994,614
780	17.96,016,372	842	19.38,776,648	904	20.81,536,924	966	22.24,297,200
781	17.98,318,957	843	19.41,079,233	905	20.83,839,509	967	22.26,599,785
782	18.00,621,542	844	19.43,381,818	906	20.86,142,095	968	22.28,902,370
783	18.02,924,127	845	19.45,684,403	907	20.88,444,680	969	22.31,204,955
784	18.05,226,712	846	19.47,986,989	908	20.90,747,265	970	22.33,507,540
785	18.07,529,297	847	19.50,289,574	909	20.93,049,850	971	22.35,810,125
786	18.09,831,883	848	19.52,592,159	910	20.95,352,435	972	22.38,112,710
787	18.12,134,468	849	19.54,894,744	911	20.97,655,020	973	22.40,415,295
788	18.14,437,053	850	19.57,197,329	912	20.99,957,605	974	22.42,717,880
789	18.16,739,638	851	19.59,499,914	913	21.02,260,190	975	22.45,020,465
790	18.19,042,223	852	19.61,802,499	914	21.04,562,775	976	22.47,323,051
791	18.21,344,808	853	19.64,105,084	915	21.06,865,360	977	22.49,625,636
792	18.23,647,393	854	19.66,407,669	916	21.09,167,945	978	22.51,928,221
793	18.25,949,978	855	19.68,710,254	917	21.11,470,531	979	22.54,230,806
794	18.28,252,563	856	19.71,012,840	918	21.13,773,116	980	22.56,533,391
795	18.30,555,148	857	19.73,315,425	919	21.16,075,701	981	22.58,835,976
796	18.32,857,734	858	19.75,618,010	920	21.18,378,286	982	22.61,138,561
797	18.35,160,319	859	19.77,920,595	921	21.20,680,871	983	22.63,441,146
798	18.37,462,904	860	19.80,223,180	922	21.22,983,456	984	22.65,743,731
799	18.39,765,489	861	19.82,525,765	923	21.25,286,041	985	22.68,046,316
800	18.42,068,074	862	19.84,828,350	924	21.27,588,626	986	22.70,348,902
801	18.44,370,659	863	19.87,130,935	925	21.29,891,211	987	22.72,651,487
802	18.46,673,244	864	19.89,433,520	926	21.32,193,797	988	22.74,954,072
803	18.48,975,829	865	19.91,736,105	927	21.34,496,382	989	22.77,256,657
804	18.51,278,414	866	19.94,038,691	928	21.36,798,967	990	22.79,559,242
805	18.53,580,999	867	19.96,341,276	929	21.39,101,552	991	22.81,861,827
806	18.55,883,585	868	19.98,643,861	930	21.41,404,137	992	22.84,164,412
807	18.58,186,170	869	20.00,946,446	931	21.43,706,722	993	22.86,466,997
808	18.60,488,755	870	20.03,249,031	932	21.46,009,307	994	22.88,769,582
809	18.62,791,340	871	20.05,551,616	933	21.48,311,892	995	22.91,072,167
810	18.65,093,925	872	20.07,854,201	934	21.50,614,477	996	22.93,374,753
811	18.67,396,510	873	20.10,156,786	935	21.52,917,062	997	22.95,677,338
812	18.69,699,095	874	20.12,459,371	936	21.55,219,648	998	22.97,979,923
813	18.72,001,680	875	20.14,761,956	937	21.57,522,233	999	23.00,282,508

Explanation of Table XXXVI.

To find the Logistical Logarithm of any Number of Minutes and Seconds, within the Limits of the Table.

AT the Top of the Table find the Minutes, and in the same Column, even with the Number of Seconds is found the Logistical Logarithm.

Note, If Hours are made any Terms of the Proportion, they are to be taken as if they were Minutes, and the Minutes of an Hour as if they were Seconds.

To find the Logistical Logarithm of any Number not exceeding 4800.

At the bottom of the Table find the Number next less than that given, and in the same Column, even with the Difference, is found the Logistical Logarithm.

Where two given Terms of the Proportion are common Numbers, one or both greater than 4800, instead of them take their Halves, Thirds, &c. But when only one of the given Terms is a common Number, and that greater than 4800, take it's Half, Third, &c. and multiply the fourth Term by 2, 3, &c.

The Logistical Logarithms in this Table are all affirmative, as well above as below 60'; but the Index of those above 60' is — 1; below 60', down to 6', the Index is 0; and below 6', the Indices (being either 1, 2, 3) are expressed in the Table.

Explanation of Table XXXVII.

TABLE XXXVII contains such of *Neper's* Logarithms, as are analogous to those common Logarithms, which consist of *three* Places of Figures.

They are divided into *three* Parts by Commas, which cut off the *one thousandth* and *one millionth* Parts of them. The following Examples are sufficient to shew the manner of using this Table.

E X A M P L E I.

What is the Neperian Logarithm of the Number 9?

1. Find by the preceeding Tables the common Logarithm of the given Number (9). ——— *Viz.* 0,9542425
2. Make this Logarithm consist of *nine* Places of Figures (including the Index) by annexing Cyphers to the right Hand thereof (if need be) ; and divide it by Points into Periods, consisting each of *three* Places of Figures, ——— thus, 095.424.250
3. In one of the Columns mark'd C. L. find the left Hand Period (095) and write down the *Neperian* Logarithm found against it, 2.18745583
4. Write down the *one thousandth* of the *Neperian* Logarithm found against (424) the middle Period, ——— 976296
5. Also write down the *one millionth* of the *Neperian* Logarithm found against (250) the right Hand Period, ——— 576
6. Their Sum is the *Neperian* Log. requir'd, 2.19722455

E X A M P L E II.

What Number corresponds to the Neperian Logarithm 2.19722455?

1. From given }
Neper. Log. } 2.19722455
Take next less }
Tab. Log. } 2.18745583 It's com. Log. = 095
2. Then from }
the Remaind. } 976872
Take the next }
less Tab. Log. }
(the right }
Hand Period } 976296 ——— = 424
excepted) }
Remainder — 576
3. Find the }
nearest Tab. }
Log. thereto } 575 ——— = 250
(neglecting }
the two right }
Hand Periods) }
4. And the common Logarithm of the re- }
quir'd Number will be found, *viz.* — } 0,95424250
5. From which by the preceeding Tables the Number re- }
quir'd (9) will be easily found.

1	2	3	4	5	6	7	8	9	1	2	3	4	5
1	2	3	4	5	6	7	8	9	61	122	183	244	305
2	4	6	8	10	12	14	16	18	62	124	186	248	310
3	6	9	12	15	18	21	24	27	63	126	189	252	315
4	8	12	16	20	24	28	32	36	64	128	192	256	320
5	10	15	20	25	30	35	40	45	65	130	195	260	325
6	12	18	24	30	36	42	48	54	66	132	198	264	330
7	14	21	28	35	42	49	56	63	67	134	201	268	335
8	16	24	32	40	48	56	64	72	68	136	204	272	340
9	18	27	36	45	54	63	72	81	69	138	207	276	345
10	20	30	40	50	60	70	80	90	70	140	210	280	350
11	22	33	44	55	66	77	88	99	71	142	213	284	355
12	24	36	48	60	72	84	96	108	72	144	216	288	360
13	26	39	52	65	78	91	104	117	73	146	219	292	365
14	28	42	56	70	84	98	112	126	74	148	222	296	370
15	30	45	60	75	90	105	120	135	75	150	225	300	375
16	32	48	64	80	96	112	128	144	76	152	228	304	380
17	34	51	68	85	102	119	136	153	77	154	231	308	385
18	36	54	72	90	108	126	144	162	78	156	234	312	390
19	38	57	76	95	114	133	152	171	79	158	237	316	395
20	40	60	80	100	120	140	160	180	80	160	240	320	400
21	42	63	84	105	126	147	168	189	81	162	243	324	405
22	44	66	88	110	132	154	176	198	82	164	246	328	410
23	46	69	92	115	138	161	184	207	83	166	249	332	415
24	48	72	96	120	144	168	192	216	84	168	252	336	420
25	50	75	100	125	150	175	200	225	85	170	255	340	425
26	52	78	104	130	156	182	208	234	86	172	258	344	430
27	54	81	108	135	162	189	216	243	87	174	261	348	435
28	56	84	112	140	168	196	224	252	88	176	264	352	440
29	58	87	116	145	174	203	232	261	89	178	267	356	445
30	60	90	120	150	180	210	240	270	90	180	270	360	450
31	62	93	124	155	186	217	248	279	91	182	273	364	455
32	64	96	128	160	192	224	256	288	92	184	276	368	460
33	66	99	132	165	198	231	264	297	93	186	279	372	465
34	68	102	136	170	204	238	272	306	94	188	282	376	470
35	70	105	140	175	210	245	280	315	95	190	285	380	475
36	72	108	144	180	216	252	288	324	96	192	288	384	480
37	74	111	148	185	222	259	296	333	97	194	291	388	485
38	76	114	152	190	228	266	304	342	98	196	294	392	490
39	78	117	156	195	234	273	312	351	99	198	297	396	495
40	80	120	160	200	240	280	320	360	100	200	300	400	500
41	82	123	164	205	246	287	328	369	101	202	303	404	505
42	84	126	168	210	252	294	336	378	102	204	306	408	510
43	86	129	172	215	258	301	344	387	103	206	309	412	515
44	88	132	176	220	264	308	352	396	104	208	312	416	520
45	90	135	180	225	270	315	360	405	105	210	315	420	525
46	92	138	184	230	276	322	368	414	106	212	318	424	530
47	94	141	188	235	282	329	376	423	107	214	321	428	535
48	96	144	192	240	288	336	384	432	108	216	324	432	540
49	98	147	196	245	294	343	392	441	109	218	327	436	545
50	100	150	200	250	300	350	400	450	110	220	330	440	550
51	102	153	204	255	306	357	408	459	111	222	333	444	555
52	104	156	208	260	312	364	416	468	112	224	336	448	560
53	106	159	212	265	318	371	424	477	113	226	339	452	565
54	108	162	216	270	324	378	432	486	114	228	342	456	570
55	110	165	220	275	330	385	440	495	115	230	345	460	575
56	112	168	224	280	336	392	448	504	116	232	348	464	580
57	114	171	228	285	342	399	456	513	117	234	351	468	585
58	116	174	232	290	348	406	464	522	118	236	354	472	590
59	118	177	236	295	354	413	472	531	119	238	357	476	595
60	120	180	240	300	360	420	480	540	120	240	360	480	600
1	2	3	4	5	6	7	8	9	1	2	3	4	5

1	6	7	8	9	1	2	3	4	5	6	7	8	9
61	366	427	488	549	121	242	363	484	605	726	847	968	1089
62	372	431	496	558	122	244	366	488	610	732	854	976	1098
63	378	441	504	567	123	246	369	492	615	738	861	984	1107
64	384	448	512	576	124	248	372	496	620	744	868	992	1116
65	390	455	520	585	125	250	375	500	625	750	875	1000	1125
66	396	462	528	594	126	252	378	504	630	756	882	1008	1134
67	402	469	536	603	127	254	381	508	635	762	889	1016	1143
68	408	476	544	612	128	256	384	512	640	768	896	1024	1152
69	414	483	552	621	129	258	387	516	645	774	903	1032	1161
70	420	490	560	630	130	260	390	520	650	780	910	1040	1170
71	426	497	568	639	131	262	393	524	655	786	917	1048	1179
72	432	504	576	648	132	264	396	528	660	792	924	1056	1188
73	438	511	584	657	133	266	399	532	665	798	931	1064	1197
74	444	518	592	666	134	268	402	536	670	804	938	1072	1206
75	450	525	600	675	135	270	405	540	675	810	945	1080	1215
76	456	532	608	684	136	272	408	544	680	816	952	1088	1224
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722	1444	2166	2888	3610	4332	5054	5776	6498	782	1564	2346	3128	3910
723	1446	2169	2892	3615	4338	5061	5784	6507	783	1566	2349	3132	3915
724	1448	2172	2896	3620	4344	5068	5792	6516	784	1568	2352	3136	3920
725	1450	2175	2900	3625	4350	5075	5800	6525	785	1570	2355	3140	3925
726	1452	2178	2904	3630	4356	5082	5808	6534	786	1572	2358	3144	3930
727	1454	2181	2908	3635	4362	5089	5816	6543	787	1574	2361	3148	3935
728	1456	2184	2912	3640	4368	5096	5824	6552	788	1576	2364	3152	3940
729	1458	2187	2916	3645	4374	5103	5832	6561	789	1578	2367	3156	3945
730	1460	2190	2920	3650	4380	5110	5840	6570	790	1580	2370	3160	3950
731	1462	2193	2924	3655	4386	5117	5848	6579	791	1582	2373	3164	3955
732	1464	2196	2928	3660	4392	5124	5856	6588	792	1584	2376	3168	3960
733	1466	2199	2932	3665	4398	5131	5864	6597	793	1586	2379	3172	3965
734	1468	2202	2936	3670	4404	5138	5872	6606	794	1588	2382	3176	3970
735	1470	2205	2940	3675	4410	5145	5880	6615	795	1590	2385	3180	3975
736	1472	2208	2944	3680	4416	5152	5888	6624	796	1592	2388	3184	3980
737	1474	2211	2948	3685	4422	5159	5896	6633	797	1594	2391	3188	3985
738	1476	2214	2952	3690	4428	5166	5904	6642	798	1596	2394	3192	3990
739	1478	2217	2956	3695	4434	5173	5912	6651	799	1598	2397	3196	3995
740	1480	2220	2960	3700	4440	5180	5920	6660	800	1600	2400	3200	4000
741	1482	2223	2964	3705	4446	5187	5928	6669	801	1602	2403	3204	4005
742	1484	2226	2968	3710	4452	5194	5936	6678	802	1604	2406	3208	4010
743	1486	2229	2972	3715	4458	5201	5944	6687	803	1606	2409	3212	4015
744	1488	2232	2976	3720	4464	5208	5952	6696	804	1608	2412	3216	4020
745	1490	2235	2980	3725	4470	5215	5960	6705	805	1610	2415	3220	4025
746	1492	2238	2984	3730	4476	5222	5968	6714	806	1612	2418	3224	4030
747	1494	2241	2988	3735	4482	5229	5976	6723	807	1614	2421	3228	4035
748	1496	2244	2992	3740	4488	5236	5984	6732	808	1616	2424	3232	4040
749	1498	2247	2996	3745	4494	5243	5992	6741	809	1618	2427	3236	4045
750	1500	2250	3000	3750	4500	5250	6000	6750	810	1620	2430	3240	4050
751	1502	2253	3004	3755	4506	5257	6008	6759	811	1622	2433	3244	4055
752	1504	2256	3008	3760	4512	5264	6016	6768	812	1624	2436	3248	4060
753	1506	2259	3012	3765	4518	5271	6024	6777	813	1626	2439	3252	4065
754	1508	2262	3016	3770	4524	5278	6032	6786	814	1628	2442	3256	4070
755	1510	2265	3020	3775	4530	5285	6040	6795	815	1630	2445	3260	4075
756	1512	2268	3024	3780	4536	5292	6048	6804	816	1632	2448	3264	4080
757	1514	2271	3028	3785	4542	5299	6056	6813	817	1634	2451	3268	4085
758	1516	2274	3032	3790	4548	5306	6064	6822	818	1636	2454	3272	4090
759	1518	2277	3036	3795	4554	5313	6072	6831	819	1638	2457	3276	4095
760	1520	2280	3040	3800	4560	5320	6080	6840	820	1640	2460	3280	4100
761	1522	2283	3044	3805	4566	5327	6088	6849	821	1642	2463	3284	4105
762	1524	2286	3048	3810	4572	5334	6096	6858	822	1644	2466	3288	4110
763	1526	2289	3052	3815	4578	5341	6104	6867	823	1646	2469	3292	4115
764	1528	2292	3056	3820	4584	5348	6112	6876	824	1648	2472	3296	4120
765	1530	2295	3060	3825	4590	5355	6120	6885	825	1650	2475	3300	4125
766	1532	2298	3064	3830	4596	5362	6128	6894	826	1652	2478	3304	4130
767	1534	2301	3068	3835	4602	5369	6136	6903	827	1654	2481	3308	4135
768	1536	2304	3072	3840	4608	5376	6144	6912	828	1656	2484	3312	4140
769	1538	2307	3076	3845	4614	5383	6152	6921	829	1658	2487	3316	4145
770	1540	2310	3080	3850	4620	5390	6160	6930	830	1660	2490	3320	4150
771	1542	2313	3084	3855	4626	5397	6168	6939	831	1662	2493	3324	4155
772	1544	2316	3088	3860	4632	5404	6176	6948	832	1664	2496	3328	4160
773	1546	2319	3092	3865	4638	5411	6184	6957	833	1666	2499	3332	4165
774	1548	2322	3096	3870	4644	5418	6192	6966	834	1668	2502	3336	4170
775	1550	2325	3100	3875	4650	5425	6200	6975	835	1670	2505	3340	4175
776	1552	2328	3104	3880	4656	5432	6208	6984	836	1672	2508	3344	4180
777	1554	2331	3108	3885	4662	5439	6216	6993	837	1674	2511	3348	4185
778	1556	2334	3112	3890	4668	5446	6224	7002	838	1676	2514	3352	4190
779	1558	2337	3116	3895	4674	5453	6232	7011	839	1678	2517	3356	4195
780	1560	2340	3120	3900	4680	5460	6240	7020	840	1680	2520	3360	4200
1	2	3	4	5	6	7	8	9	1	2	3	4	5

1	6	7	8	9	1	2	3	4	5	6	7	8	9
781	4686	5467	6248	7029	841	1682	2523	3364	4205	5046	5887	6728	7569
782	4692	5474	6256	7038	842	1684	2526	3368	4210	5057	5894	6730	7578
783	4698	5481	6264	7047	843	1686	2529	3372	4215	5058	5901	6744	7587
784	4704	5488	6272	7056	844	1688	2532	3376	4220	5064	5908	6752	7596
785	4710	5495	6280	7065	845	1690	2535	3380	4225	5070	5915	6760	7605
786	4716	5502	6288	7074	846	1692	2538	3384	4230	5076	5922	6768	7614
787	4722	5509	6296	7083	847	1694	2541	3388	4235	5082	5929	6776	7623
788	4728	5516	6304	7092	848	1696	2544	3392	4240	5088	5936	6784	7632
789	4734	5523	6312	7101	849	1698	2547	3396	4245	5094	5943	6792	7641
790	4740	5530	6320	7110	850	1700	2550	3400	4250	5100	5950	6800	7650
791	4746	5537	6328	7119	851	1702	2553	3404	4255	5106	5957	6808	7659
792	4752	5544	6336	7128	852	1704	2556	3408	4260	5112	5964	6816	7668
793	4758	5551	6344	7137	853	1706	2559	3412	4265	5118	5971	6824	7677
794	4794	5558	6352	7146	854	1708	2562	3416	4270	5124	5978	6832	7686
795	4770	5565	6360	7155	855	1710	2565	3420	4275	5130	5985	6840	7695
796	4776	5572	6368	7164	856	1712	2568	3424	4280	5136	5992	6848	7704
797	4782	5579	6376	7173	857	1714	2571	3428	4285	5142	5999	6856	7713
798	4788	5586	6384	7182	858	1716	2574	3432	4290	5148	6006	6864	7722
799	4794	5593	6392	7191	859	1718	2577	3436	4295	5154	6013	6872	7731
800	4800	5600	6400	7200	860	1720	2580	3440	4300	5160	6020	6880	7740
801	4806	5607	6408	7209	861	1722	2583	3444	4305	5166	6027	6888	7749
802	4812	5614	6416	7218	862	1724	2586	3448	4310	5172	6034	6896	7758
803	4818	5621	6424	7227	863	1726	2589	3452	4315	5178	6041	6904	7767
804	4824	5628	6432	7236	864	1728	2592	3456	4320	5184	6048	6912	7776
805	4830	5635	6440	7245	865	1730	2595	3460	4325	5190	6055	6920	7785
806	4836	5642	6448	7254	866	1732	2598	3464	4330	5196	6062	6928	7794
807	4842	5649	6456	7263	867	1734	2601	3468	4335	5202	6069	6936	7803
808	4848	5656	6464	7272	868	1736	2604	3472	4340	5208	6076	6944	7812
809	4854	5663	6472	7281	869	1738	2607	3476	4345	5214	6083	6952	7821
810	4860	5670	6480	7290	870	1740	2610	3480	4350	5220	6090	6960	7830
811	4866	5677	6488	7299	871	1742	2613	3484	4355	5226	6097	6968	7839
812	4872	5684	6496	7308	872	1744	2616	3488	4360	5232	6104	6976	7848
813	4878	5691	6504	7317	873	1746	2619	3492	4365	5238	6111	6984	7857
814	4884	5698	6512	7326	874	1748	2622	3496	4370	5244	6118	6992	7866
815	4890	5705	6520	7335	875	1750	2625	3500	4375	5250	6125	7000	7875
816	4896	5712	6528	7344	876	1752	2628	3504	4380	5256	6132	7008	7884
817	4902	5719	6536	7353	877	1754	2631	3508	4385	5262	6139	7016	7893
818	4908	5726	6544	7362	878	1756	2634	3512	4390	5268	6146	7024	7902
819	4914	5733	6552	7371	879	1758	2637	3516	4395	5274	6153	7032	7911
820	4920	5740	6560	7380	880	1760	2640	3520	4400	5280	6160	7040	7920
821	4926	5747	6568	7389	881	1762	2643	3524	4405	5286	6167	7048	7929
822	4932	5754	6576	7398	882	1764	2646	3528	4410	5292	6174	7056	7938
823	4938	5761	6584	7407	883	1766	2649	3532	4415	5298	6181	7064	7947
824	4944	5768	6592	7416	884	1768	2652	3536	4420	5304	6188	7072	7956
825	4950	5775	6600	7425	885	1770	2655	3540	4425	5310	6195	7080	7965
826	4956	5782	6608	7434	886	1772	2658	3544	4430	5316	6202	7088	7974
827	4962	5789	6616	7443	887	1774	2661	3548	4435	5322	6209	7096	7983
828	4968	5796	6624	7452	888	1776	2664	3552	4440	5328	6216	7104	7992
829	4974	5803	6632	7461	889	1778	2667	3556	4445	5334	6223	7112	8001
830	4980	5810	6640	7470	890	1780	2670	3560	4450	5340	6230	7120	8010
831	4986	5817	6648	7479	891	1782	2673	3564	4455	5346	6237	7128	8019
832	4992	5824	6656	7488	892	1784	2676	3568	4460	5352	6244	7136	8028
833	4998	5831	6664	7497	893	1786	2679	3572	4465	5358	6251	7144	8037
834	5004	5838	6672	7506	894	1788	2682	3576	4470	5364	6258	7152	8046
835	5010	5845	6680	7515	895	1790	2685	3580	4475	5370	6265	7160	8055
836	5016	5852	6688	7524	896	1792	2688	3584	4480	5376	6272	7168	8064
837	5022	5859	6696	7533	897	1794	2691	3588	4485	5382	6279	7176	8073
838	5028	5866	6704	7542	898	1796	2694	3592	4490	5388	6286	7184	8082
839	5034	5873	6712	7551	899	1798	2697	3596	4495	5394	6293	7192	8091
840	5040	5880	6720	7560	900	1800	2700	3600	4500	5400	6300	7200	8100
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901	1802	2703	3604	4505	5406	6307	7208	8109
902	1804	2706	3608	4510	5412	6314	7216	8118
903	1806	2709	3612	4515	5418	6321	7224	8127
904	1808	2712	3616	4520	5424	6328	7232	8136
905	1810	2715	3620	4525	5430	6335	7240	8145
906	1812	2718	3624	4530	5436	6342	7248	8154
907	1814	2721	3628	4535	5442	6349	7256	8163
908	1816	2724	3632	4540	5448	6356	7264	8172
909	1818	2727	3636	4545	5454	6363	7272	8181
910	1820	2730	3640	4550	5460	6370	7280	8190
911	1822	2733	3644	4555	5466	6377	7288	8199
912	1824	2736	3648	4560	5472	6384	7296	8208
913	1826	2739	3652	4565	5478	6391	7304	8217
914	1828	2742	3656	4570	5484	6398	7312	8226
915	1830	2745	3660	4575	5490	6405	7320	8235
916	1832	2748	3664	4580	5496	6412	7328	8244
917	1834	2751	3668	4585	5502	6419	7336	8253
918	1836	2754	3672	4590	5508	6426	7344	8262
919	1838	2757	3676	4595	5514	6433	7352	8271
920	1840	2760	3680	4600	5520	6440	7360	8280
921	1842	2763	3684	4605	5526	6447	7368	8289
922	1844	2766	3688	4610	5532	6454	7376	8298
923	1846	2769	3692	4615	5538	6461	7384	8307
924	1848	2772	3696	4620	5544	6468	7392	8316
925	1850	2775	3700	4625	5550	6475	7400	8325
926	1852	2778	3704	4630	5556	6482	7408	8334
927	1854	2781	3708	4635	5562	6489	7416	8343
928	1856	2784	3712	4640	5568	6496	7424	8352
929	1858	2787	3716	4645	5574	6503	7432	8361
930	1860	2790	3720	4650	5580	6510	7440	8370
931	1862	2793	3724	4655	5586	6517	7448	8379
932	1864	2796	3728	4660	5592	6524	7456	8388
933	1866	2799	3732	4665	5598	6531	7464	8397
934	1868	2802	3736	4670	5604	6538	7472	8406
935	1870	2805	3740	4675	5610	6545	7480	8415
936	1872	2808	3744	4680	5616	6552	7488	8424
937	1874	2811	3748	4685	5622	6559	7496	8433
938	1876	2814	3752	4690	5628	6566	7504	8442
939	1878	2817	3756	4695	5634	6573	7512	8451
940	1880	2820	3760	4700	5640	6580	7520	8460
941	1882	2823	3764	4705	5646	6587	7528	8469
942	1884	2826	3768	4710	5652	6594	7536	8478
943	1886	2829	3772	4715	5658	6601	7544	8487
944	1888	2832	3776	4720	5664	6608	7552	8496
945	1890	2835	3780	4725	5670	6615	7560	8505
946	1892	2838	3784	4730	5676	6622	7568	8514
947	1894	2841	3788	4735	5682	6629	7576	8523
948	1896	2844	3792	4740	5688	6636	7584	8532
949	1898	2847	3796	4745	5694	6643	7592	8541
950	1900	2850	3800	4750	5700	6650	7600	8550
1	2	3	4	5	6	7	8	9

1	2	3	4	5	6	7	8	9
951	1902	2853	3804	4755	5706	6657	7608	8559
952	1904	2856	3808	4760	5712	6664	7616	8568
953	1906	2859	3812	4765	5718	6671	7624	8577
954	1908	2862	3816	4770	5724	6678	7632	8586
955	1910	2865	3820	4775	5730	6685	7640	8595
956	1912	2868	3824	4780	5736	6692	7648	8604
957	1914	2871	3828	4785	5742	6699	7656	8613
958	1916	2874	3832	4790	5748	6706	7664	8622
959	1918	2877	3836	4795	5754	6713	7672	8631
960	1920	2880	3840	4800	5760	6720	7680	8640
961	1922	2883	3844	4805	5766	6727	7688	8649
962	1924	2886	3848	4810	5772	6734	7696	8658
963	1926	2889	3852	4815	5778	6741	7704	8667
964	1928	2892	3856	4820	5784	6748	7712	8676
965	1930	2895	3860	4825	5790	6755	7720	8685
966	1932	2898	3864	4830	5796	6762	7728	8694
967	1934	2901	3868	4835	5802	6769	7736	8703
968	1936	2904	3872	4840	5808	6776	7744	8712
969	1938	2907	3876	4845	5814	6783	7752	8721
970	1940	2910	3880	4850	5820	6790	7760	8730
971	1942	2913	3884	4855	5826	6797	7768	8739
972	1944	2916	3888	4860	5832	6804	7776	8748
973	1946	2919	3892	4865	5838	6811	7784	8757
974	1948	2922	3896	4870	5844	6818	7792	8766
975	1950	2925	3900	4875	5850	6825	7800	8775
976	1952	2928	3904	4880	5856	6832	7808	8784
977	1954	2931	3908	4885	5862	6839	7816	8793
978	1956	2934	3912	4890	5868	6846	7824	8802
979	1958	2937	3916	4895	5874	6853	7832	8811
980	1960	2940	3920	4900	5880	6860	7840	8820
981	1962	2943	3924	4905	5886	6867	7848	8829
982	1964	2946	3928	4910	5892	6874	7856	8838
983	1966	2949	3932	4915	5898	6881	7864	8847
984	1968	2952	3936	4920	5904	6888	7872	8856
985	1970	2955	3940	4925	5910	6895	7880	8865
986	1972	2958	3944	4930	5916	6902	7888	8874
987	1974	2961	3948	4935	5922	6909	7896	8883
988	1976	2964	3952	4940	5928	6916	7904	8892
989	1978	2967	3956	4945	5934	6923	7912	8901
990	1980	2970	3960	4950	5940	6930	7920	8910
991	1982	2973	3964	4955	5946	6937	7928	8919
992	1984	2976	3968	4960	5952	6944	7936	8928
993	1986	2979	3972	4965	5958	6951	7944	8937
994	1988	2982	3976	4970	5964	6958	7952	8946
995	1990	2985	3980	4975	5970	6965	7960	8955
996	1992	2988	3984	4980	5976	6972	7968	8964
997	1994	2991	3988	4985	5982	6979	7976	8973
998	1996	2994	3992	4990	5988	6986	7984	8982
999	1998	2997	3996	4995	5994	6993	7992	8991
1	2	3	4	5	6	7	8	9

The Use of Table XXXVIII.

PROBLEM I.

To find the Product of two Numbers, one of which doth not exceed three Places of Figures.

EXAMPLE.

Required the Product of 875963 by 976?

976X3	is (Page 169, Tab. 38.)	2928
976X6X10	—	5856
976X9X100	—	8784
976X5X1000	—	4880
976X7X10000	—	6832
976X8X100000	—	7808
<hr/> 976X875963 is their Sum.		<hr/> 854939888

PROBLEM II.

To find the Product of any two Numbers.

This Problem will be rendered easier, by placing the Tabular Figures in a different Order from those above; see the Manner of ranging those of the last Example, as they will appear on the taking down of each Number, from the Table.

1 st No. viz.	1 st & 2 ^d Nos. viz.	3 Numb. viz.	4 Numbers. viz.	5 Numbers. viz.	The whole Example, viz.
976X3	976X63	976X963	976X5963	976X75963	976X875963
8	68	468	0468	20468	820468
2	52	852	8852	38852	038852
9	89	789	8789	88789	888789
2	52	852	4852	64852	764852
					854939888

The Application of this Manner of placing the Figures needs only an

EXAMPLE.

Required the Product of 875963 by 752976?

875963	X	976 (as above)		820468
				038852
				888789
				764852
				640826
875963X752000	(where the first Figure will fall under the Place of Thousands)			166615
				027752
				653642
875963X752976	—	—	—	<hr/> 659579115888

P R O B.

PROBLEM III.

To find the Quotient of two Numbers, when the Divisor does not exceed three Places of Figures.

EXAMPLE.

Divide 854939888 by 976?

From the left Hand Figures of } 854939888
the Dividend — — —

Take the next lesser Tabular } 7808 standing under 8
Figures found on a Line }
with the Divisor (976) — — —

From the Remainder with a } 7413 — —
Figure brought down — — —

Take the next lesser Number } 6832 7
on the same Line — — —

Proceeding in the same Man-
ner 'till all the Figures of
the Dividend are brought
down.

$$\begin{array}{r}
 5819 \\
 4880 \quad \text{---} \quad \text{---} \quad \text{---} \quad 5 \\
 \hline
 9398 \\
 8784 \quad \text{---} \quad \text{---} \quad 9 \\
 \hline
 6148 \\
 5856 \quad \text{---} \quad \text{---} \quad 6 \\
 \hline
 2928 \\
 2928 \quad \text{---} \quad \text{---} \quad 3 \\
 \hline
 \end{array}$$

Then will the Quotient be found, viz. 875963

PROBLEM IV.

To find the Quotient of any two Numbers.

Put A = the three left hand Figures of the Divisor.

B = the remaining Figures thereof.

D = the Dividend.

n = 10, 100, 1000, &c. when B consists of 1, 2, 3, &c. Figures.

Let $\frac{D}{n} = d$, and $\frac{B}{n} = b$; also, $\frac{d}{A} = Q$, and $\frac{b}{A} = q$.

Then will the required Quotient be $Q - Qq + Qq^2 - Qq^3$ &c.

EXAMPLE.

Divide 659579115888 by 875963?

Here 875 = A ; 963 = B ; 659579115888 = D and 1000 = n

Therefore 0,963 = b ; and 659579115,888 = d .

Now 875)659579116(= 753805 = Q (found by problem 3.)

And 875)0,963(= 0,0011 = q

Th. 753 05X0,0011 = 829, &c. = Qq

And 753805 — 829 = 752976 = the Quotient required.

The

The principal Design of inserting Table the 38th in this Work, was to facilitate the finding of Numbers or Logarithms, intermediate to those in the beforegoing Tables: the Methods of doing which are as follow:

PROBLEM V.

A Number, of more than four and less than eight Places of Figures being given, to find its Logarithm. (See Page 139 and 240.)

CASE I.

If the left Hand Figures of the given Number are less than 4343.

EXAMPLE.

What is the Logarithm of 3093450?

In Tab. 33. the Log. of (3093143) the next Tabular Number (with the proper Index) is } 6,4904

The Difference of the two Numbers (with a Cypher annexed) is } 3070

From which take (2848) the Number next lesser than that Difference, found (on a Line with (712) the Tabular Difference) in Table 38. } 2848 { annexing to the Log. the Figure under which it stands. } 4

From the Remainder } 222

Take $\frac{1}{10}$ of (2136) the Number in the same Line whose initial Figures are next lesser } 214 standing under 3

8

The initial Figure nearest to this last Remainder is } 7 standing under 1

And the Logarithm required is 6,4904431

CASE II.

If the left Hand Figures of the given Number exceed 4343.

EXAMPLE.

What is the Logarithm of 8066133?

In Tab. 32. the Log. of (8066) the next lesser Tabular Number (with the proper Index) is } 6,9066582

In Tab. 38. on a Line with (133) the Difference of the Numbers, and under (5) the left Hand Figure of (539) the Tabular Difference is } 66 5

On the same Line, and under 3 the second Figure of that Difference is 399 ; $\frac{1}{10}$ of which is } 40

And under 9 is 1197 ; $\frac{1}{10}$ of which is } 12

The Sum of these four Lines is the Log. required 6,9066654

P R O B L E M XVI.

A Logarithm being given, consisting if more than four and less than eight Places of Figures, to find the Number corresponding thereto.

C A S E I.

If the left Hand Figures of the given Log. (rejecting the Index) are less than 6378.

E X A M P L E.

Of what Number is 6,4904431 the Logarithm?

In Tab. 33. the Number to (,4904) the next lesser } 3093143
 Tabular Log. is _____ }
 In Tab. 38. on a Line with 431, the Difference of }
 the Logarithms, and under (7) the left Hand Fi- } 3017
 gure of (712) the Tabular Difference is _____ }
 On the same Line, and under (1) the second Figure }
 of that Difference is 431; $\frac{1}{10}$ of which is, — } 43
 And under 2 is 862; $\frac{1}{100}$ of which is _____ } 09

The Sum of which is the Number required — 3093450

C A S E II.

If the left Hand Figures of the given Log. (rejecting the Index) exceed 6378.

E X A M P L E.

Of what Number is 6,9066654 the Logarithm?

In Tab. 32. the Number to (,9066582) the next lesser } 8066
 Tabular Log. is _____ }
 The Difference of the two }
 Logs. (with a Cypher } 720
 annexed) is _____ }
 From which take (539) the }
 Number next lesser than }
 that Difference (found } 539 { annexing to
 on a Line with (539) the } the Figure
 Tab. Diff.) in Tab. 38. } it stands, }

From the Remainder — 181
 Take $\frac{1}{10}$ of (1617) the }
 Number in the same } 162 standing under 3
 Line, whose initial Fi- }
 gures are next lesser, — }

The initial Figures nearest } 19
 to this Remainder, are } 16 standing under 3

And the Number required, — 8066133

P R O B L E M VII.

To find the Log. Sine or Log. Tangent of an Arc (greater than two Degrees) consisting of Degrees Minutes and Seconds.

E X A M P L E.

What is the Log. Sine of $4^{\circ} : 31' : 27''$?

The Log Sine of $4^{\circ} : 31'$ is (per Table 34. Page 98) 8,8962455
(By Table 38.) Multiply $(266 =)_{\frac{1}{60}}$ of (15963) the
Tab. Diff. annex'd thereto, by (27) the given Num-
ber of Seconds; adding the Product, viz.
(Page 161) against 266 and under 7

Their Sum is the Logarithm required

$$\begin{array}{r} 1862 \\ 532 \\ \hline 8,8969637 \end{array}$$

P R O B L E M VIII.

A Log. Sine or Log. Tangent being given, to find the Arc to which it belongs in Degrees, Minutes and Seconds.

E X A M P L E.

Of what Arc is 8,8969637 the Log. Sine?

From the given Log — — 8,8969637

Take the next less Tab. Log. 8,8962455 = Sine of $4^{\circ} : 31'$

Remainder — — — 7182

Multiply (718) the 3 left Hand Fi- }
gures of the Remainder by 6

and Divide the Product 4309

By (160) the three left Hand Figures
of (15963) the *Tab. Diff.* in the Man-
ner directed in *Prob. 3. Viz.* From
the said Product Take the next Less
Figures on the Line with 160. } 320 standing under 2

Seek the Nearest Figures to the Rem. 1109

Viz. — — — 1120 standing under 7

And the Quotient will be the Seconds required

27

Therefore the Arc will be

$4^{\circ} : 31' : 27''$

F I N I S.

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